REPORT RESUMES

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FACTS ON THE MAJOR KILLING AND CRIPPLING DISEASES IN THE UNITED STATES TODAY.
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MAJOR CAUSES OF DEATH AND DISABILITY, RESULTS OF MEDICAL RESEARCH, LIFE EXPECTANCY FIGURES, COST OF ILLNESS TO THE UNITED STATES, AND GOVERNMENT EXPENDITURES IN MEDICINE AND HEALTH ARE PRESENTED TABULARLY AND GRAPHICALLY IN QUESTION AND ANSWER FORM. FOR EACH OF 14 MAJOR DISEASES, PERTINENT FACTS ARE LISTED ABOUT INCIDENCE, COST, DEATH RATE, RESEARCH FINDINGS, PROGNOSIS, CARE AND TREATMENT, AND PREVENTION. EXPENDITURES FOR MEDICAL RESEARCH ARE COMPARED WITH OTHER AMERICAN EXPENDITURES, SUCH AS DEFENSE, SPACE EXPLORATION, AND CONSUMER GOODS. FACT SHEETS ARE ALSO PROVIDED ON REHABILITATION OF THE DISABLED AND POPULATION GROWTH. COMPREHENSIVE CHARTS PROVIDE INFORMATION ON (1) DEATH AND DEATH RATES FOR 32 DISEASES BY YEAR FROM 1945 TO 1965 AND (2) FUNDS RAISED AND FUNDS ALLOCATED TO MEDICAL RESEARCH BY 17 VOLUNTARY HEALTH AGENCIES FROM 1952 TO 1964. SOURCES OF THE INFORMATION ARE INCLUDED. THIS DOCUMENT IS ALSO AVAILABLE FROM THE NATIONAL HEALTH EDUCATION COMMITTEE, INC., 866 UNITED NATIONS PLAZA, NEW YORK, NEW YORK 10017, FOR $5.25. (MY)

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ARTERIOSCLEROSIS
("HEART ATTACKS" & "STROKES")

CANCER

MENTAL ILLNESSES

MENTAL RETARDATION

ARTHRITIS

BLINDNESS

NEUROLOGICAL DISEASES

DEAFNESS

POPULATION

REHABILITATION

TUBERCULOSIS

VITAL STATISTICS

ALLERGIC & INFECTIOUS DISEASES

1966 EDITION

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- POPULATION
- REHABILITATION
- TUBERCULOSIS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Tables on . . .

- VITAL STATISTICS
- LIFE EXPECTANCY
- INCOME & EXPENDITURES
- VOLUNTARY HEALTH AGENCIES FUNDS RAISED AND ALLOCATED FOR MEDICAL RESEARCH

Compiled in 1966 by . . .

THE NATIONAL HEALTH EDUCATION COMMITTEE, INC.
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Does
Medical Research
Pay-off—
in lives?
in dollars?

1966 EDITION

DOES MEDICAL RESEARCH PAY OFF?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
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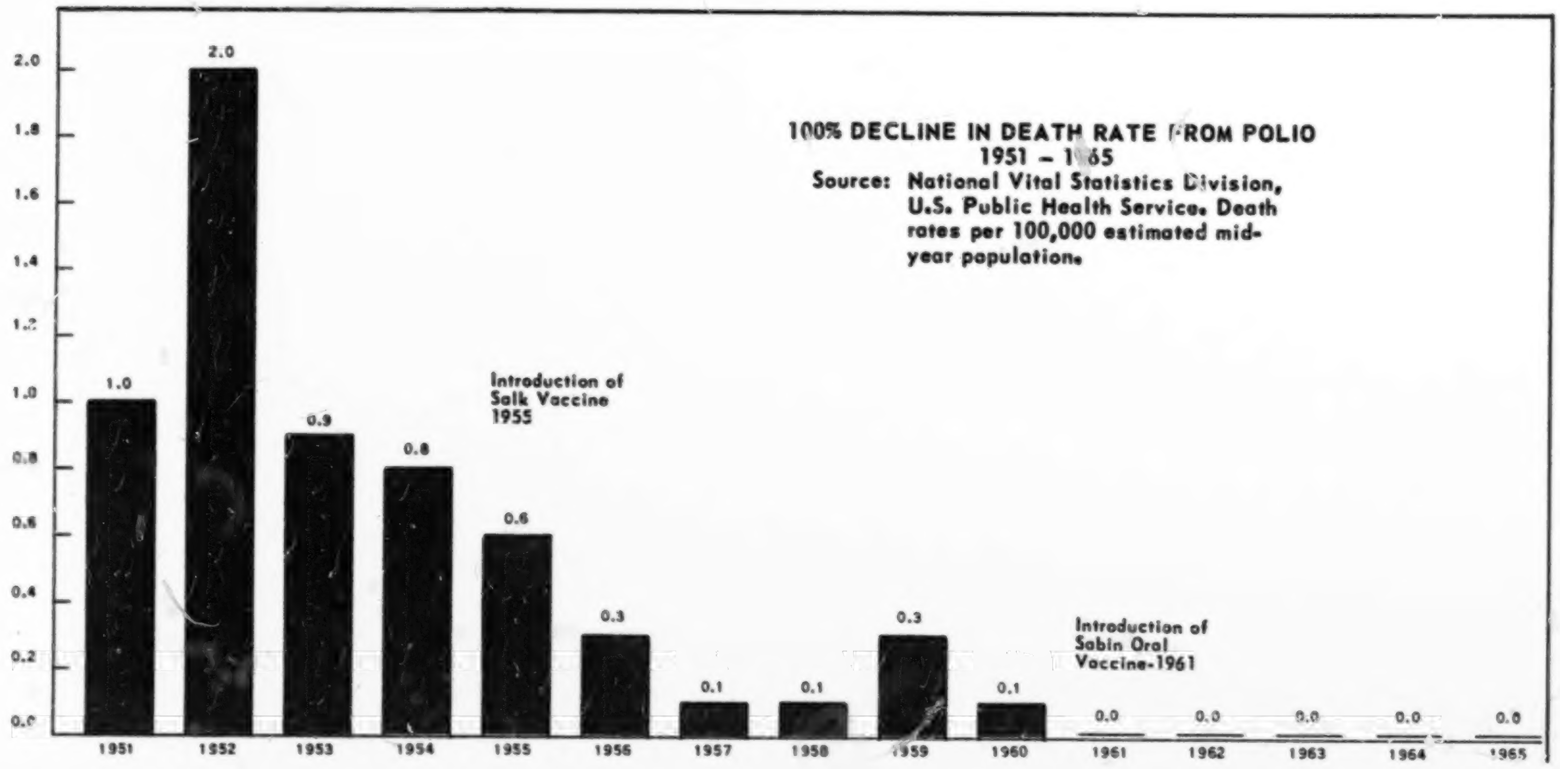
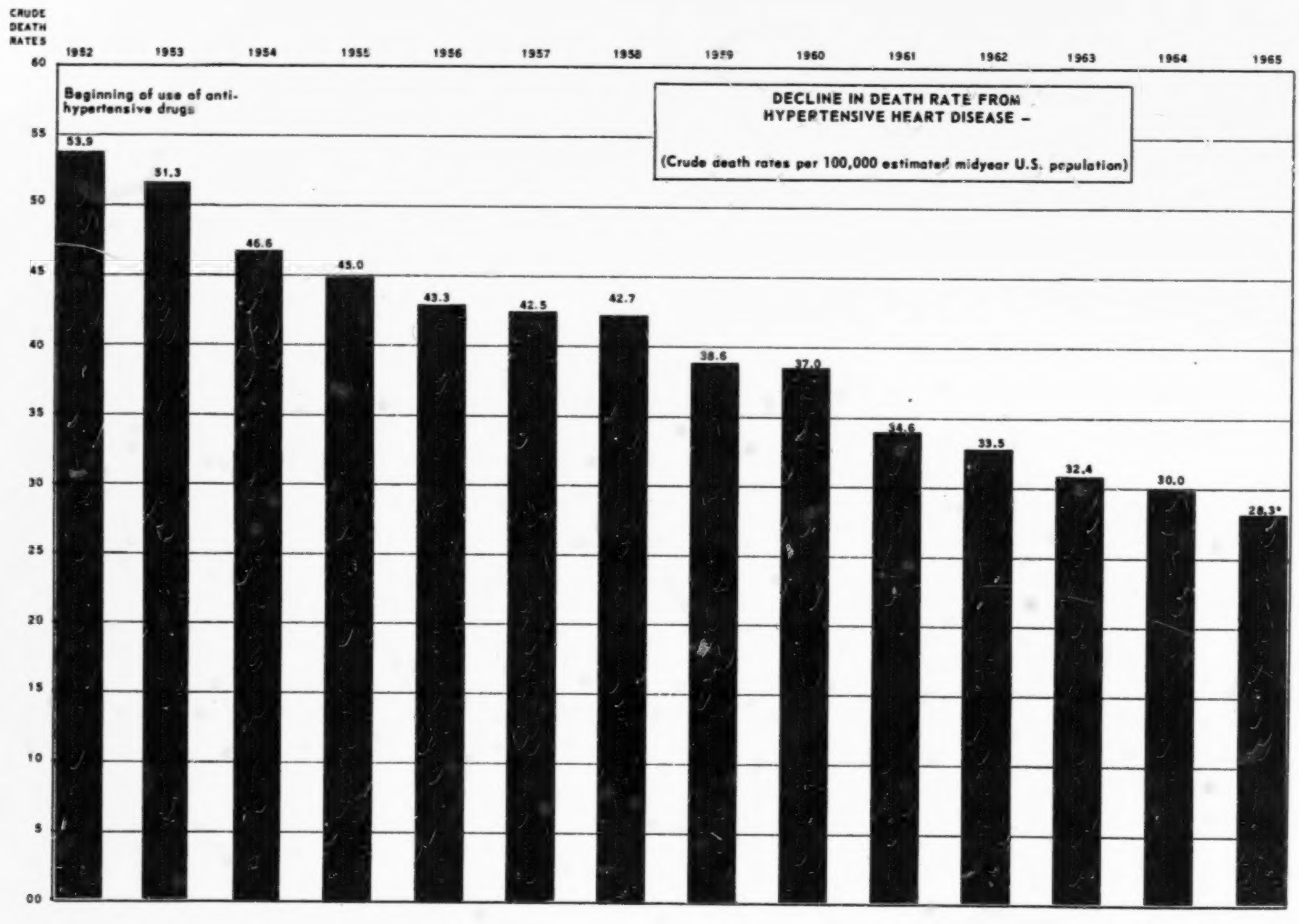
1966

A REPORT ON
HOW OUR
MEDICAL RESEARCH
DOLLARS
HAVE PAID OFF
FOR THE
AMERICAN PEOPLE



100% DECLINE IN DEATH RATE FROM POLIO 1951 – 1965

Source: National Vital Statistics Division, U.S. Public Health Service. Death rates per 100,000 estimated mid-year population.



DECLINE IN DEATH RATE FROM HYPERTENSIVE HEART DISEASE –

(Crude death rates per 100,000 estimated midyear U.S. population)

*ESTIMATED

Source: Nat'l Vital Statistics Division, Washington, D.C.

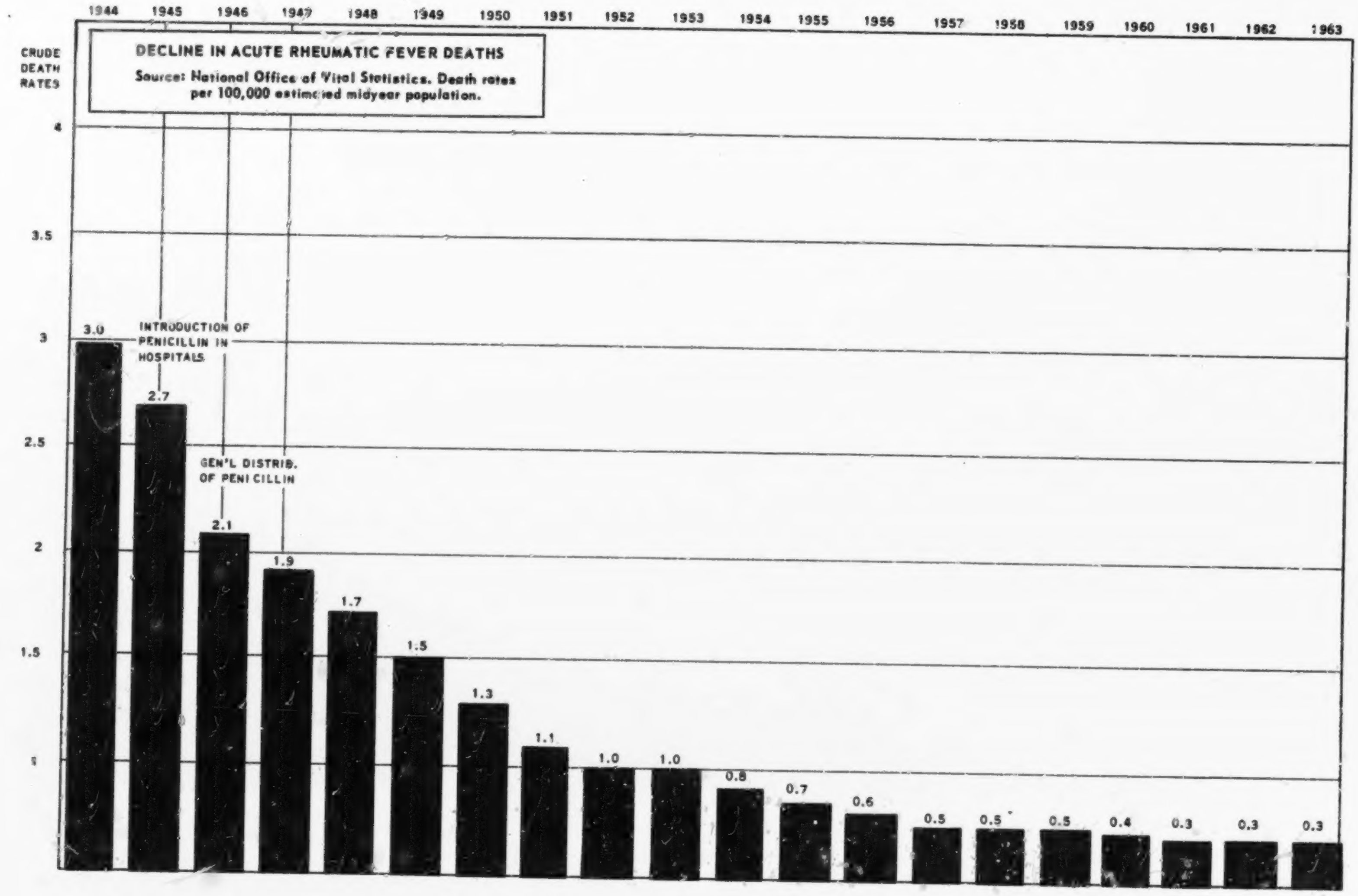
WHAT HAVE BEEN THE DECLINES IN **DEATH RATES** SINCE 1944 DUE TO MEDICAL RESEARCH?

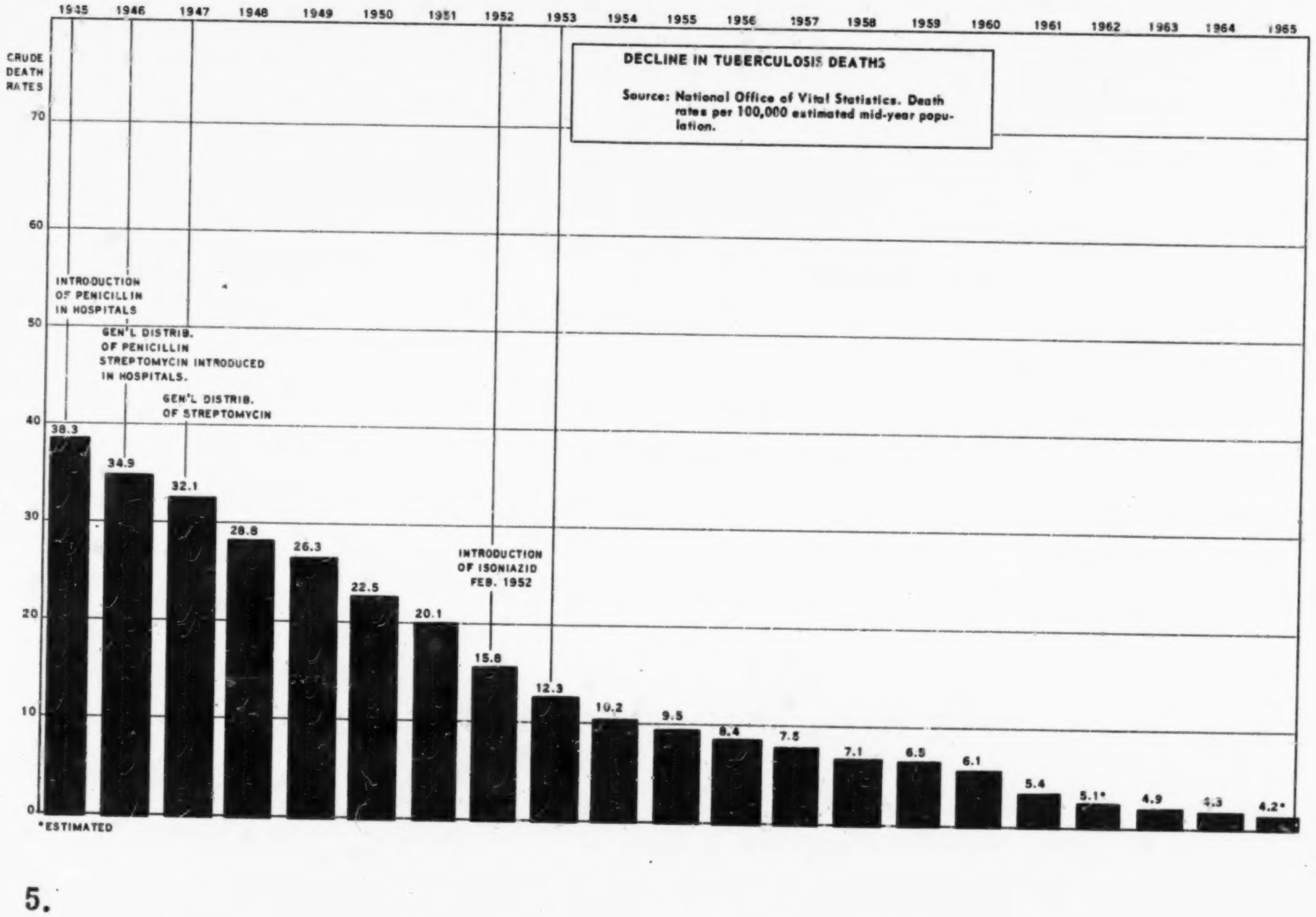
Between 1944 and 1965, death rates from these causes have shown the following percentage declines:

	Percent Decline
Whooping cough	100% (1951-65)
Influenza	93%
Polio	100% (1951-65)
Tuberculosis	88%
Maternal deaths	86%
Dysentery	86% (1951-65)
Acute rheumatic fever	90% (1944-63)
Appendicitis	81%
Syphilis	85%
Acute nephritis	67% (1951-65)
Hypertensive heart disease	49% (1951-65)
Asthma	51% (1951-65)
Infant deaths	38%
Pneumonia	26%
Anemias	31% (1951-65)

DUE TO MEDICAL RESEARCH PROGRESS!

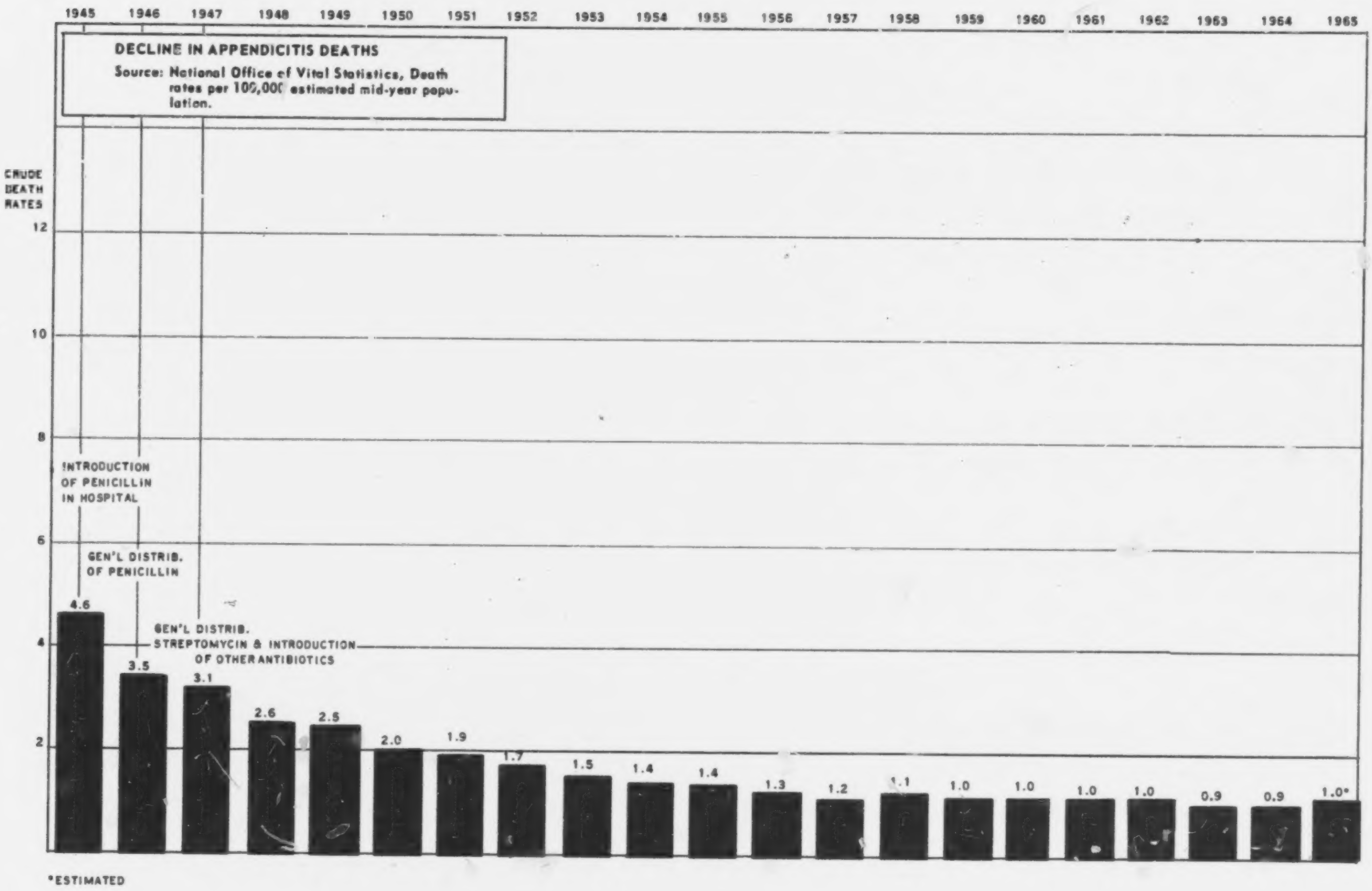
WHAT HAVE BEEN THE DECLINES





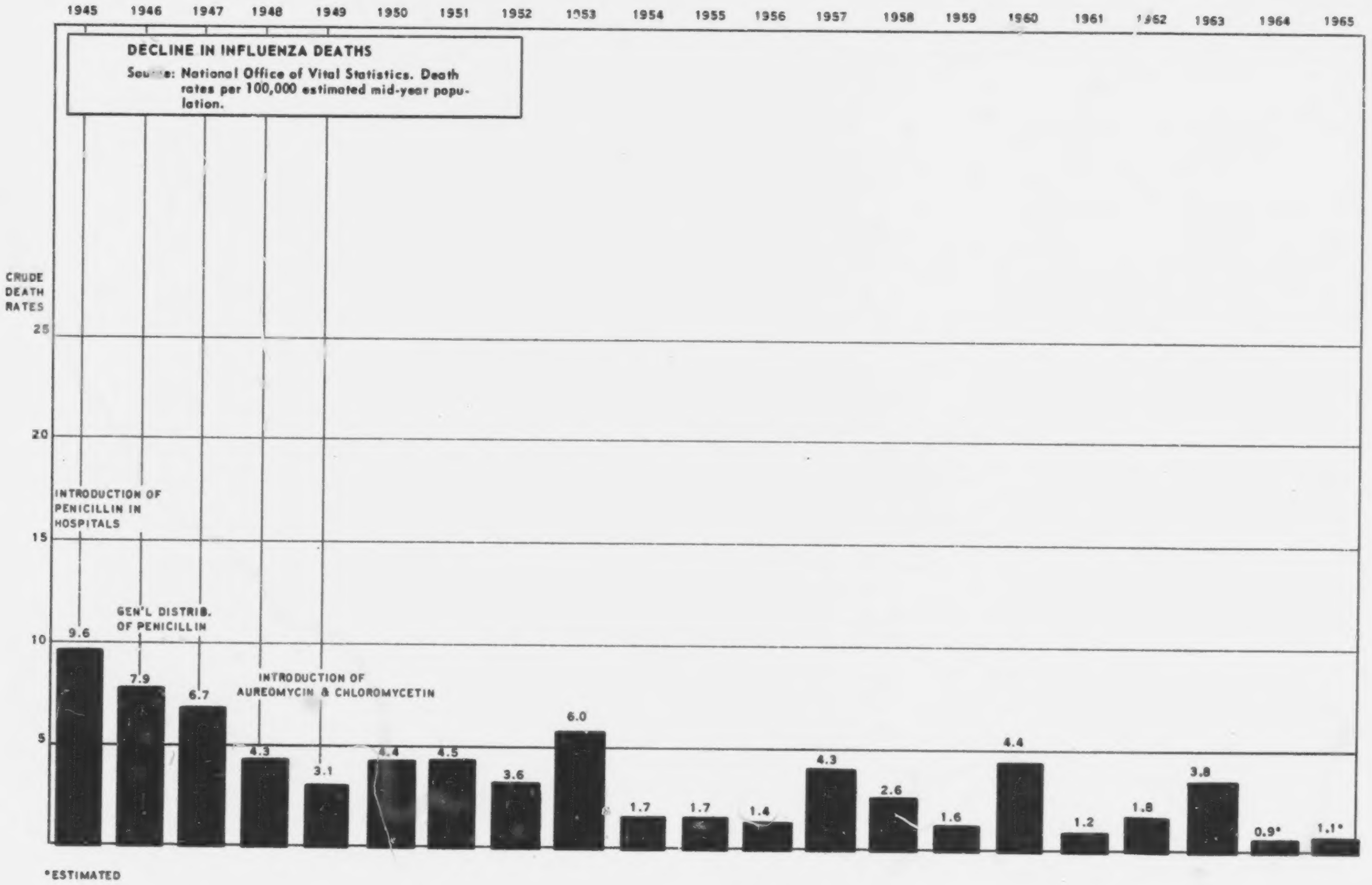
*ESTIMATED

IN DEATH RATES?



DECLINE IN APPENDICITIS DEATHS

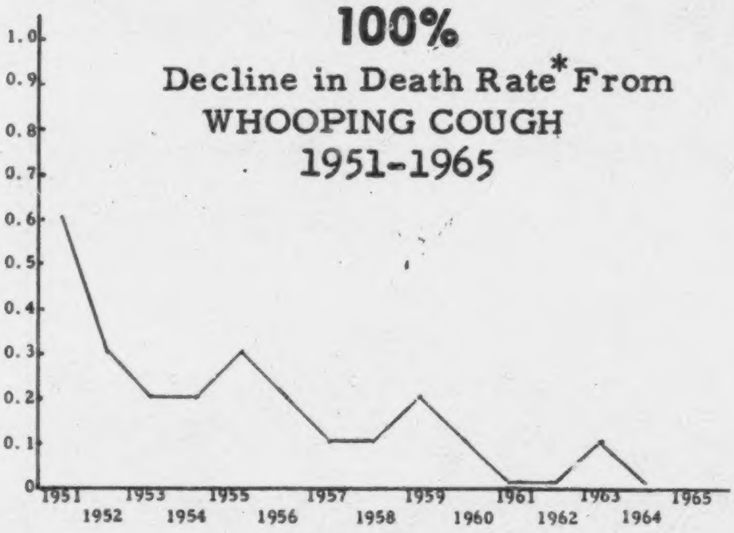
Source: National Office of Vital Statistics, Death rates per 100,000 estimated mid-year population.



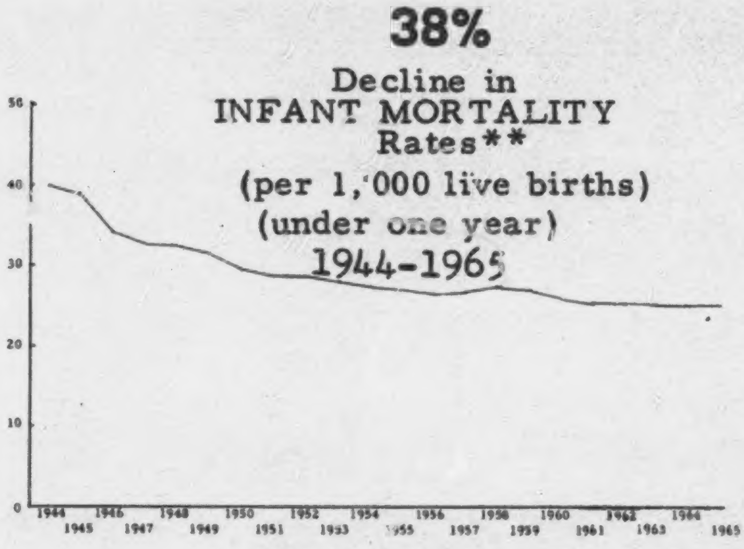
DECLINE IN INFLUENZA DEATHS

Source: National Office of Vital Statistics. Death rates per 100,000 estimated mid-year population.

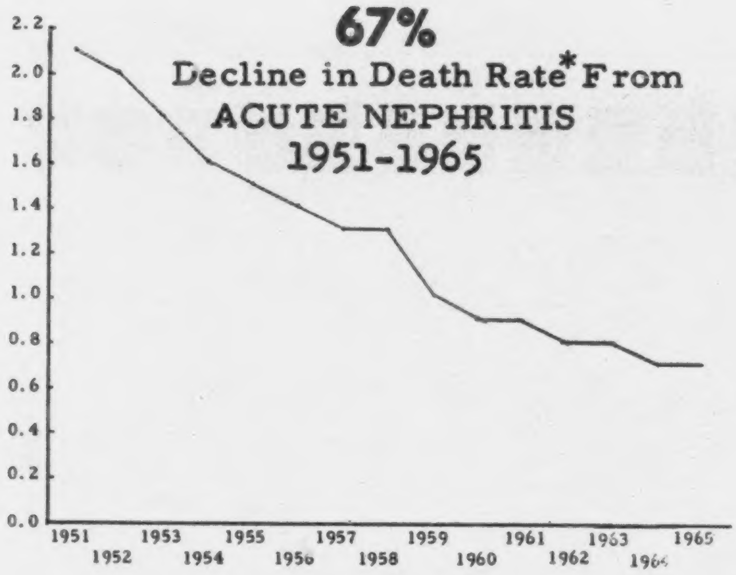
WHAT HAVE BEEN THE DECLINES IN DEATH RATES?



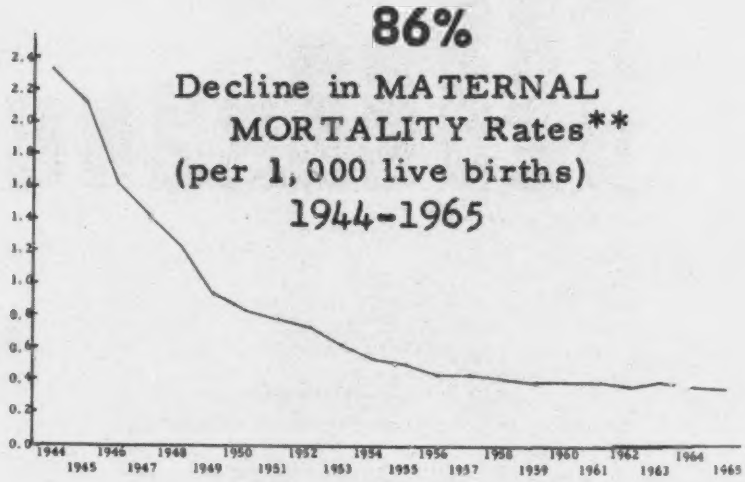
100%
Decline in Death Rate* From
WHOOPING COUGH
1951-1965



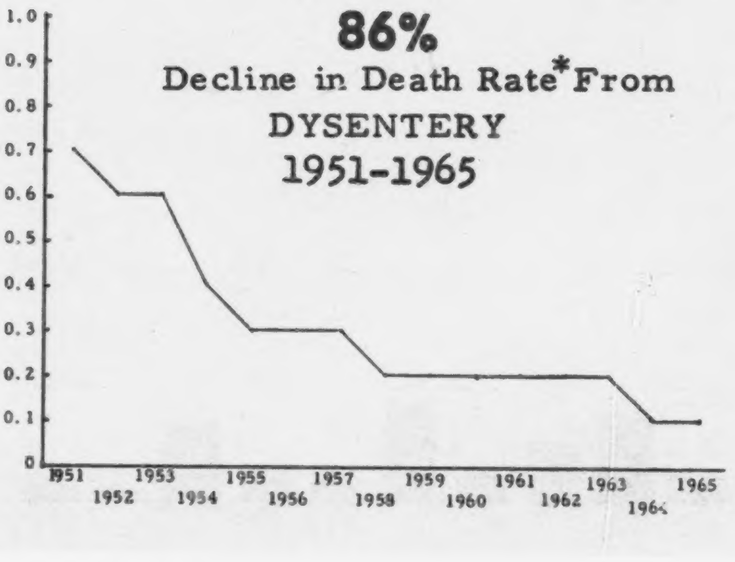
38%
Decline in
INFANT MORTALITY
Rates**
(per 1,000 live births)
(under one year)
1944-1965



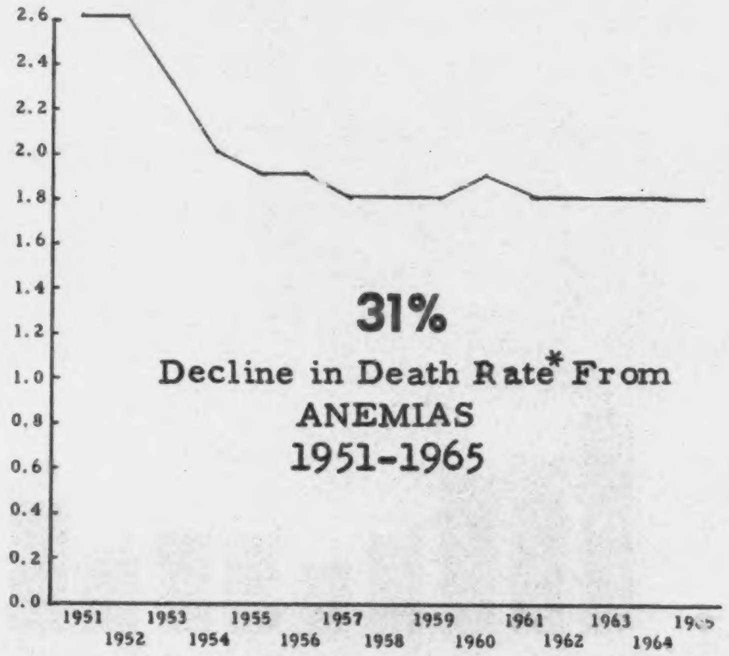
67%
Decline in Death Rate* From
ACUTE NEPHRITIS
1951-1965



86%
Decline in MATERNAL
MORTALITY Rates**
(per 1,000 live births)
1944-1965



86%
Decline in Death Rate* From
DYSENTERY
1951-1965



31%
Decline in Death Rate* From
ANEMIAS
1951-1965

WHAT **DISABILITIES** HAVE BEEN REDUCED DUE TO MEDICAL RESEARCH?

1. TO WHAT EXTENT HAVE THE MENTAL HOSPITAL POPULATIONS DECLINED?

The tranquilizing drugs (reserpine, chlorpromazine, and a whole host of new drugs, including the psychic energizers) have, over the past 10 years, revolutionized the care of state mental hospital patients and brought about an unprecedented sustained annual reduction in state hospital populations.

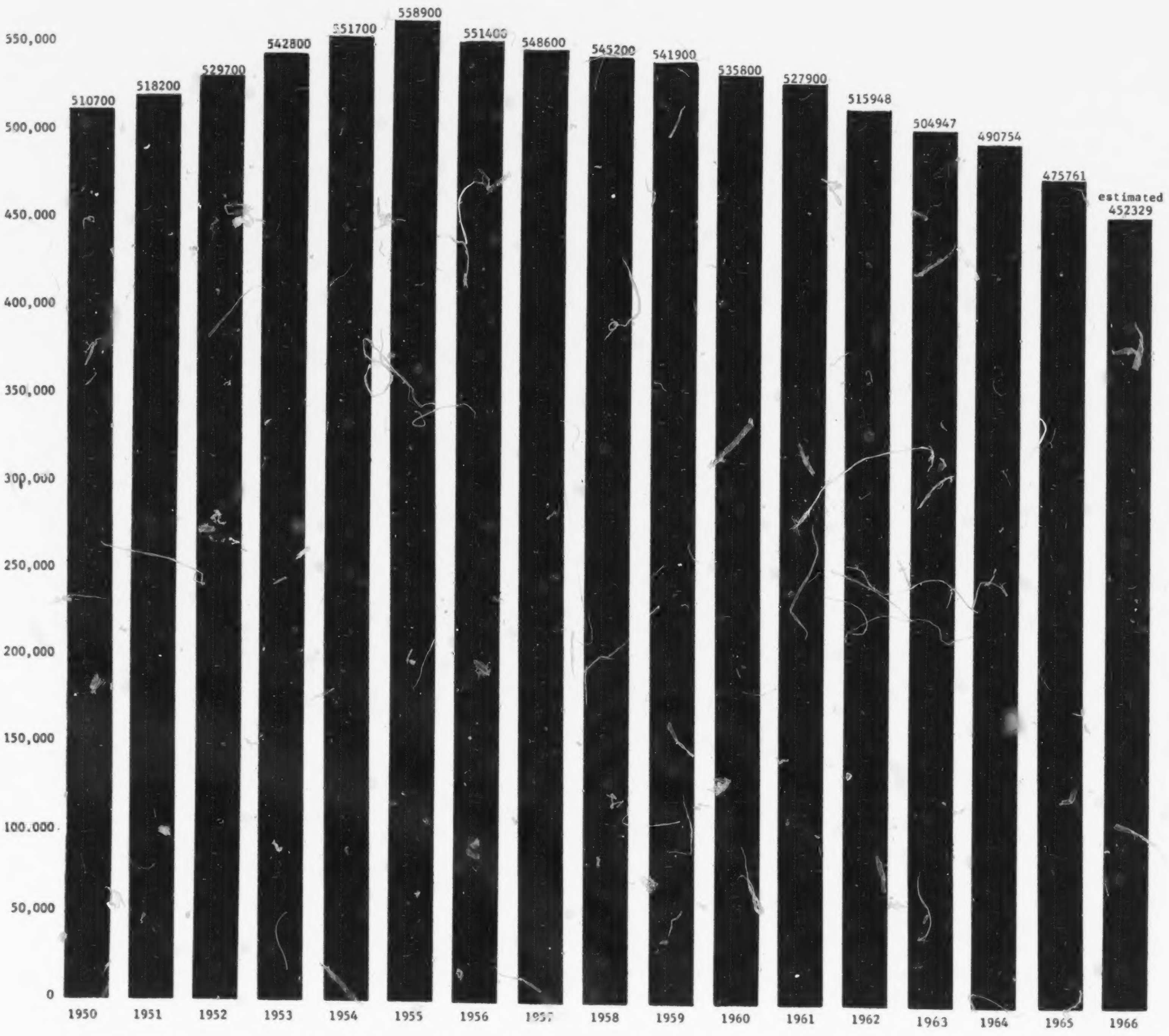
At the end of 1955, there were 558,922 resident patients in State and local government mental hospitals, and the number had been constantly rising due to lack of effective therapies for schizophrenia and depressions. During that same year, there were 178,003 admissions to and 126,498 net releases from these hospitals. (1)

At the end of 1965, even though admissions had increased 136,000 to a total of 314,443, there were 83,161 fewer resident patients in these same hospitals in 1965 as compared to 1955. (1)

This reduction in institutionalized patients over the past 10 years is roughly equivalent to the combined mental hospital populations of 19 states: Alabama, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Florida, Idaho, Kansas, Kentucky, Maine, Mississippi, Missouri, North and South Dakota, Minnesota, Vermont and Washington.

The key to this spectacular reduction is the 126% increase in number of patients released each year - from 126,500 in 1955 to 287,000 in 1965.

ESTIMATED NUMBER OF RESIDENT PATIENTS IN STATE & LOCAL GOVERNMENT MENTAL HOSPITALS IN THE U.S. - 1950-1965

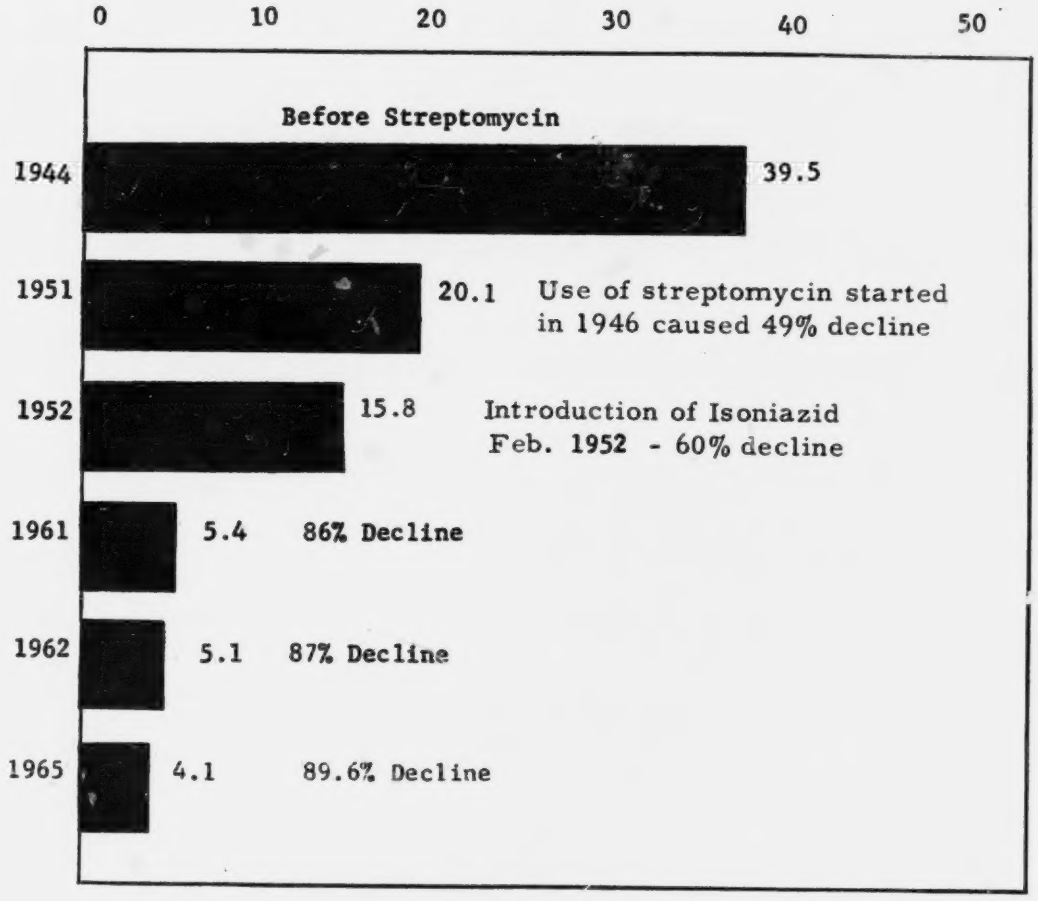


Releases from New York State mental hospitals alone have increased over 113% between 1955 and 1964. Net releases for the year ending March 31, 1955 totaled 11,540; as of March 31, 1964, 24,688. (2) The resident patient population has dropped by 8,036 patients. (2)

2. WHAT HAS BEEN THE DECLINE IN THE NUMBER OF POLIO CASES?

In 1952, 57,879 polio cases were reported; in 1963, only an estimated 449 were reported - a 99% decline from 1952 (3) the lowest number of cases reported in the U.S. since reporting began in 1912. This decline is due to the discovery and use of polio vaccine.

DECLINE IN TUBERCULOSIS DEATH RATE - 1944, 1951, 1952, 1961, 1962, 1965



Before Streptomycin

Use of streptomycin started in 1946 caused 49% decline

Introduction of Isoniazid Feb. 1952 - 60% decline

86% Decline

87% Decline

89.6% Decline

3. WHAT HAS BEEN THE DECLINE IN THE NUMBER OF CASES OF TUBERCULOSIS?

In 1952, 85,607 active cases of tuberculosis were reported. In 1963, an estimated 54,062 active cases were reported - a decline of 37%. (3) Since before the distribution of streptomycin which began in 1946, the TB death rate has declined 89.6%. Following the discovery of the effectiveness of isoniazid (in combination with PAS) as a treatment for TB in 1952, the death rate declined (between 1952 and 1965 alone) 74%.

HOW MANY YEARS HAVE BEEN ADDED TO THE AVERAGE LIFE EXPECTANCY OF AMERICANS BECAUSE OF MEDICAL RESEARCH?

In the 22 years, 1943-1965, life expectancy for Americans - males and females - increased from 63.3 years to 70.2 years, a total of almost 7 years.

The median age at death has increased from 63 years in 1943 to 69.6 years in 1964. This increase in life span has added greatly to the production and consumption of goods in the United States. The gross national product was $211.4 billion in 1944 and has increased to $622 billion in 1964. (3) These added years of life are certainly a major factor in the increase in our gross national product, as well as the reduction in disabilities achieved through medical research advances.

This advance in the prolongation of the prime of life has taken place as a result of research supported by the voluntary health agencies, the National Institutes of Health of the U.S. Public Health Service, and the pharmaceutical industry.

The major health advances in recent years have come largely from the United States due to the greater effort and expenditure of funds which was possible in the United States through funds voted to the National Institutes of Health and the great effort of the voluntary health agencies, and the pharmaceutical industry.

Life expectancy in the U. S. has increased from 49 years in 1900 to 60 years in 1937 to 70 years in 1965.

1963 Life Expectancy
(At Birth)

Over-All	Males		Females	
	White	Non-White	White	Non-White
69.9 years	67.5 years	60.9 years	74.4 years	66.5 years

(Detailed figures still incomplete for 1965.)

WHAT IS THE MOST IMPORTANT MEDICAL ADVANCE SO FAR IN THE 60's?

Without doubt, the discovery of the usefulness of a reliable contraceptive pill, such as Enovid and others, is the most practical medical advance in the decade so far, as it makes it possible for families to have children by choice and not by chance, when they are physically and economically capable of caring for their children.

WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS?

I. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN THE TREATMENT OF ARTERIOSCLEROSIS OF THE HEART (heart attack)?

The value of treatment with anticoagulants during the first 4 weeks after acute myocardial infarction (heart attack) is now established. Such therapy reduces the mortality rate approximately in half. (4)

Recent large-scale, well controlled studies have confirmed the finding that there is a marked reduction in the recurrence rate, hospitalization and death rate of patients who have suffered from myocardial infarction if they are controlled on long-term anticoagulant therapy for at least two years. The findings suggest that this improvement may be maintained for as long as 4 years. (4) (34) (35) (36)

The weight of total evidence favors this decision. A recent study using a somewhat lower anticoagulant dosage concluded that if anticoagulants are administered for the first and subsequent attacks of myocardial infarction and for all thrombo-embolic complications which arise there may be no gain in keeping the patient on anticoagulants for life. There is fairly general agreement, however, that if the patient exhibits recurrent thrombo-embolic complications, anticoagulant therapy should probably be continued indefinitely unless contra-indications develop.

A female hormone preparation, Premarin, has been reported by 2 groups to reduce the death rate more than 50% and increase survival time following a heart attack in males under 53 years of age. (5) (6) (7)

II. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN THE TREATMENT OF HYPERTENSION?

Following the development of the anti-hypertension drugs, the death rate from hypertensive heart disease declined 49% between 1951 and 1965.

Studies have shown that elevations in blood pressure (for any given age group of the population) are tied in with decreased life expectancy. Insurance company studies of over 4 million people show life expectancy is reduced by a blood pressure of 150/100 mm. Hg compared with normal pressure (less than 130/90). People with elevated blood pressure of 150/100 mm. Hg have the following reductions in life expectancy, depending on age and sex:

Age	Reduction in Life Expectancy (Years)*	
	Men	Women
35	16 1/2	(no data)
45	11 1/2	8 1/2
55	6	4

*Adapted from estimates by Statistical Bureau, Metropolitan Life Insurance Co. Based on experience of 26 companies, 1935-1954. Courtesy CIBA, Summit, N.J.

III. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN THE TREATMENT OF CANCER?

Survivals of more than five years have been obtained through the use of drugs in several different forms of cancer which had a high fatality rate once the disease metastisized:

(1) Choriocarcinoma treated with Methotrexate (9);

(2) Retinoblastoma (tumor of the eye) treated with TEM plus x-rays. (9);

(3) Wilm's tumor (tumor of the kidney in children) treated with Actinomycin D (10).

In some cases, chemotherapy, while not curative, has delayed the progression of the disease and therefore prolonged survival. This appears to be true in breast cancer and carcinoma of the prostate, with the use of estrogen preparations in cancer of the prostate and the use of estrogen preparations or androgens, depending on age of patient, in breast cancer.

For the first time, skin tumors were successfully treated with topical applications of ointments containing antitumor drugs.

Treatment of more than 5,000 primary skin lesions in about 300 patients.

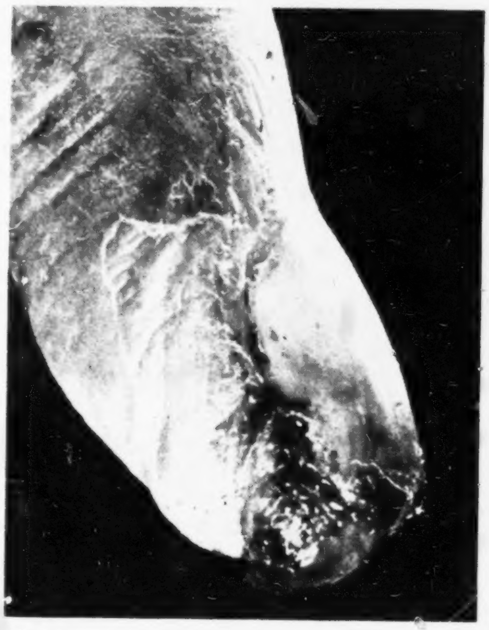


Fig. 1.

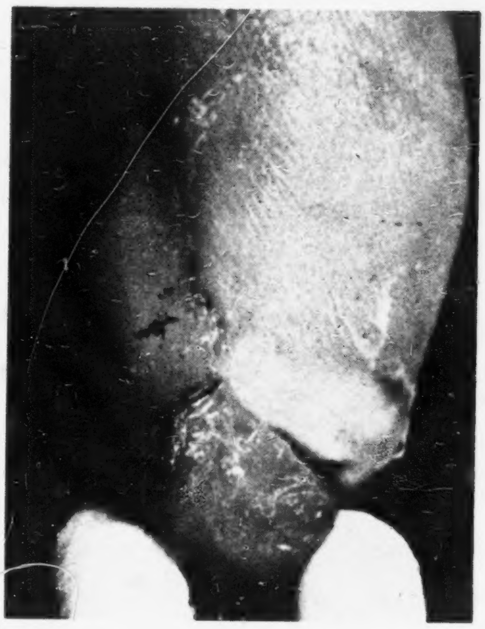


Fig. 2.

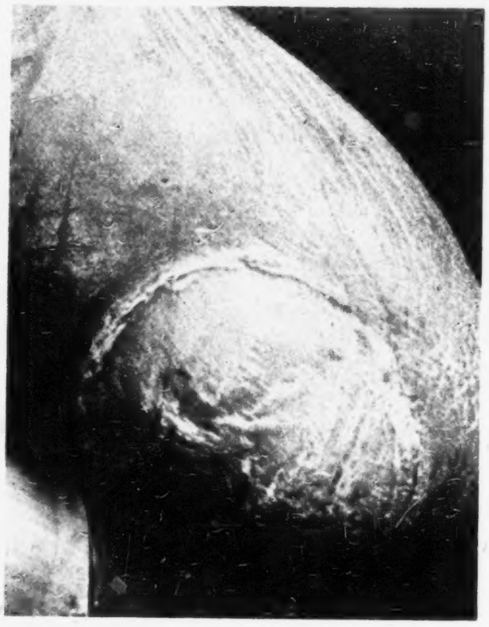


Fig. 3.

Fig. 1. Patient with metastatic adenocarcinoma of the colon. This lesion metastasized to the finger while the patient was receiving intravenous 5-fluorouracil, to which he was responding with regressions of tumor at other sites. Fig. 2. Lesion after 7 daily administrations of an ointment containing 20% 5-fluorouracil. Lesion is undergoing necrosis. Adjacent normal skin and subcutaneous tissue shows no adverse reaction. Fig. 3. Site of lesion at 3 months after discontinuing 4 week course of daily applications of 20% 5-fluorouracil ointment. The tumor has undergone resolution. Normal skin and nail have regrown without marked abnormality, indicating lack of damage to normal tissues.

applying a hydrophilic cream base containing 0.5% to 20% 5-Fluorouracil (5-FU) caused regression in more than 90% of basal cell carcinomas and premalignant solar keratoses involving large areas of the skin. Differential action on neoplastic and normal tissues, respectively, resulted in minimal or no scar formation. Resistant lesions regressed when 30% 5-FU was applied. Regression also occurred with epitheliomas arising in severe and extensive radiodermatitis, metastatic skin lesions of adenocarcinomas, and local recurrence of lymphosarcoma. Regressions have lasted for observation periods of up to 5 years. (14)

IV. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN THE TREATMENT OF VIRUS DISEASES?

A. DEVELOPMENT OF INFLUENZA VACCINES

A total of 86,000 deaths in excess of the normally expected number occurred in the U.S. as a result of the 3 epidemic prevalences of influenza in the period 1957-1960. The high-risk groups were demonstrated to be persons over 65 years of age, persons with certain associated chronic diseases, particularly cardiovascular disease and broncho-pulmonary disease, and pregnant women. (12)

Deaths from influenza could be reduced if people were routinely immunized by the newer vaccine against Asian flu and types A and B influenza viruses.

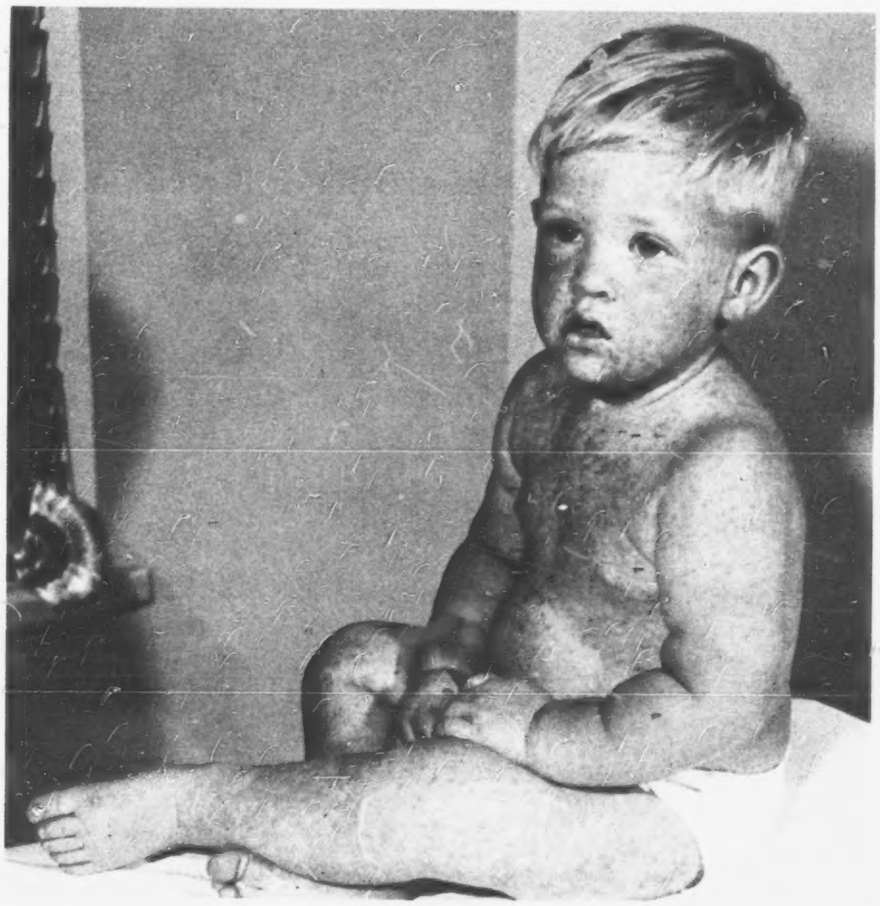
B. DEVELOPMENT OF POLIO VACCINES

The National Foundation estimates the Salk vaccine has saved between 1954 and 1960 about 30,000 people from becoming victims of polio. This would mean the saving of about 2,000 deaths from polio and a saving in patient care costs in excess of $75 million. The preservation of human usefulness, in terms of probable lifetime earnings, would exceed $1 billion. (13)

An oral vaccine is now also available.

Polio cases have declined from 57,879 in 1952 to only an estimated 449 in 1963 -- a 99% decline. (3)

C. DEVELOPMENT OF MEASLES VACCINE



In 1963, 385,156 cases of measles were reported in the United States. (3) Many of these can be eliminated in the future with wide-spread distribution and use of a vaccine against measles. 440 people died from measles in 1965.

D. DEVELOPMENT OF A GERMAN MEASLES VACCINE

Researchers at the National Institutes of Health recently announced development of a new vaccine against German measles, the viral disease responsible for deforming thousands of babies. The vaccine is still being evaluated but preliminary results are very encouraging that an effective safe vaccine, offering long lasting protection, has been found. (16)

V. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN ARTHRITIS, METABOLIC DISEASES & DIABETES?

a. Development of the use of steroid hormone compounds in the treatment of arthritis and other disorders.

These drugs are cortisone and hydrocortisone and their synthetic analogues prednisone, methyl prednisolone, triamcinalone, dexamethasone, and others. These compounds can be effective in suppressing the painful and inflammatory symptoms of rheumatoid arthritis. (15)

Other new drugs helpful in the treatment of rheumatoid arthritis include:

(a) Phenylbutazone, which may reduce inflammation temporarily, relieves pain and stiffness; but like other powerful drugs sometimes causes side effects; (20)

(b) Antimalarials - Certain compounds such as chloroquine, which have been developed against malaria, are used in the treatment of rheumatoid arthritis and systemic lupus erythematosus. Care must be taken in their use because of possible systemic toxic effects, including ocular involvement. (20)

(c) Indomethacin - This is a new anti-inflammatory drug, not related to cortisone or aspirin, which may relieve certain symptoms associated with rheumatoid arthritis. It can be prescribed for long-term treatment, with relatively minor side-effects. Experience suggests its greatest usefulness to be in spondylitis, gout and osteoarthritis, particularly osteoarthritis of the hip. (20)

GOUT can now be effectively treated with drugs like colchicine to arrest and prevent recurrences of acute attacks, and with such uricosuric agents as probenecid (benemid), phenylbutazone (butazolidin), and sulfinpyrazone (anturan) which are effective in reducing uric acid concentration in blood and tissue to normal levels.

A new drug, Allopurinol, has also been found to be effective in preventing the body from making too much uric acid in the first place. (20)

GOUTY TOE

NORMAL TOE

GOUTY HAND
WITH TOPHI

Current synthetic derivatives of cortisone may be life-saving in LUPUS ERYTHEMATOSUS, DERMATOMYOSITIS, ACUTE RHEUMATIC CARDITIS with congestive heart failure. (15)

Steroids are also useful in the treatment of ADDISON's DISEASE, and for patients who have undergone adrenalectomy or hypophysectomy. These steroids have revolutionized the treatment of certain diseases, such as thrombocytopenic purpura, severe chronic asthma, ulcerative colitis, polyarteritis nodosa and infections of the eyes.

b. DEVELOPMENT OF NEW TEST FOR GONOCOCCAL ARTHRITIS

A rapid, simple and reliable test for gonococcal arthritis, employing immunofluorescent technique which detects presence of antibodies to this organism in 2 drops of patient's serum, has been developed. This disease is frequently missed in women yet when recognized early can be effectively cured by penicillin. (15)

c. DEVELOPMENT OF DIAGNOSTIC TESTS FOR RHEUMATOID ARTHRITIS

A number of tests have been developed which can pinpoint rheumatoid arthritis, whereas in the past it was difficult to distinguish between rheumatoid and other forms of arthritis.

The sheep cell agglutination test, latex fixation test, Bentonite flocculation test, and others are extremely valuable in the differential diagnosis of arthritis; some of these tests are even useful in the diagnosis of other related rheumatic diseases. (15)

These tests have been developed in recent years as a result of research grants of the National Institute of Arthritis and Metabolic Diseases.

These new tests are based on the presence in the blood of patients of specific "rheumatoid factors". Contemporary studies pertaining to these factors, and to other hypersensitivity phenomena in the rheumatic diseases, constitute hopeful developments toward the eventual determination of their respective causes.

d. WHAT ADVANCES HAVE BEEN MADE AGAINST DIABETES?

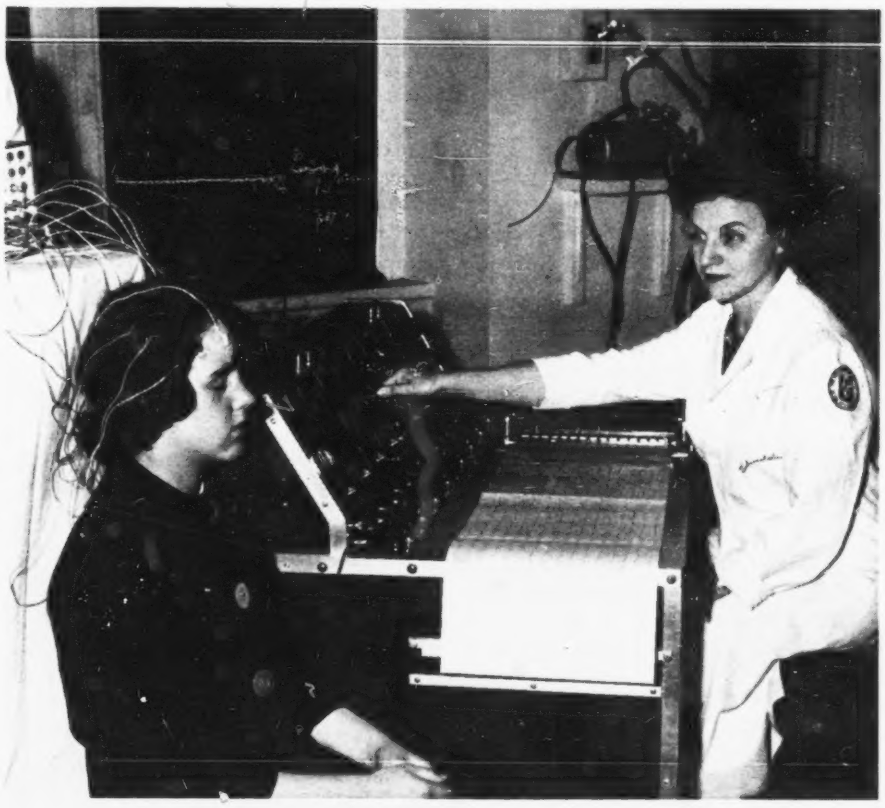
DEVELOPMENT OF ORAL DIABETIC DRUGS

Two out of every 5 diabetics, with advice from their physicians have switched from insulin by injection to these new products, such as tolbutamide. The drugs are also proving useful in combination. Many diabetics who do not respond satisfactorily to any single drug are being successfully treated with a combination of them.

VI. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN NEUROLOGICAL DISEASES?

a. NEW DRUGS FOR EPILEPSY

Many new anticonvulsant drugs have been developed which can wholly or partially control epileptic seizures in some 80% of cases, including Phenobarbital, diphenylhydantoin sodium (Dilantin sodium), Tridione, Paradione, Mesantoin, Phenurone, Mysoline, Mebaral, Celontin, Milontin, Zarontin, Diamox, Bromides, etc. Some of these drugs in combination are more effective than when used alone. Surgical relief is now also possible in a few selected cases. (16)



The electroencephalogram being taken here is not only an excellent diagnostic tool but also increasingly used in research.

b. DEVELOPMENT OF A SIMPLE, INEXPENSIVE TEST FOR DETECTING PHENYLKETONURIA (PKU)

A simple, inexpensive test has been developed for detecting phenylketonuria (PKU), an inherited biochemical condition which damages the brain by storing excessive amounts of phenylalanine in the blood. The new blood test is rapid and permits mass screening procedures for essential early detection and treatment of high blood levels of phenylalanine among the newborn.

A special phenylalanine-free diet can prevent the serious complication of mental retardation associated with PKU. (16)

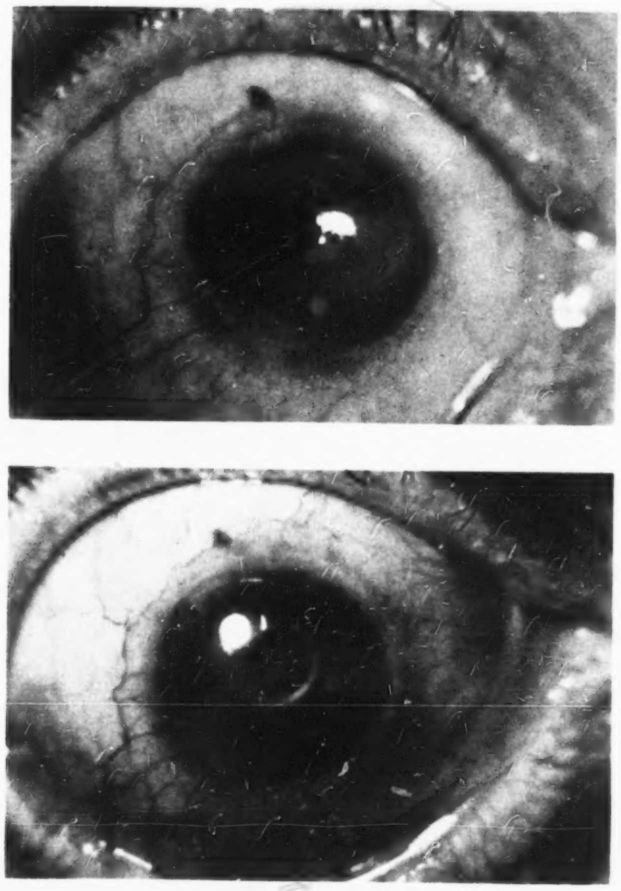
VII. WHAT ARE THE MAJOR RESEARCH PAYOFFS AND DEVELOPMENTS AGAINST DISORDERS OF VISION?

a. A cure for herpes simplex keratitis, the agonizing shingles of the eye, has been found. The drug called IDU, used to treat cancer patients, was found to be a cure for herpes simplex keratitis by a grantee of the National Institute of Neurological Diseases and Blindness. The cure is thought to be the first successful treatment of a virus disease in the eye with an antiviral drug. Herpes simplex keratitis is a prominent cause of blindness in this country and it is probably the leading cause of corneal scarring necessitating transplant operations. (16)

b. A new technique for removing congenital cataracts in children allows the opaque lens (cataract) to be drawn out by "needle aspiration" instead of breaking the fibers which hold the lens in place. Cataract surgery in children was previously very difficult because of the toughness of these fibers, which had to be broken in order to extract the lens. (16)

c. Adult surgery for cataracts is often facilitated by the enzyme, alpha-chymotrypsin, which studies supported by the Nat'l Institute of Neurological Diseases and Blindness have proved to be safe to use. This chemical weakens the ligament holding the lens so that the lens is more easily tumbled out. (16)

d. Progress has been made in research relating to the preservation of corneas for transplants or graftings to replace opaque corneas of patients. In addition to preservation by dehydration, recent studies indicate that corneas may also be stored and shipped in the deep frozen state. Since freezing is a simpler process, it makes possible the storage of donor material until needed. (16)



At Columbia-Presbyterian Medical Center a "plastic button" has been developed for insertion into a portion of the clouded cornea. New techniques have enabled a large number of patients, among several hundred cases, to enjoy restored vision, where transplant of the human cornea has not accomplished this.

The "plastic button" gives the effect of a clear cornea through which light can be transmitted to the retina.

VIII. _ WHAT ARE THE MAJOR RESEARCH PAYOFFS AND DEVELOPMENTS IN TROPICAL MEDICINE?

The World Health Organization programs, using the discoveries of medical research, have accomplished the following: (17)

IN MALARIA:

Out of 1.5 billion people inhabiting originally malarious areas, 343 million now live in areas where malaria has been eradicated, some 713 million are covered by eradication programs in advanced stages, and 321 million by programs in preparatory stages by the World Health Organization. (17)

The disease is transmitted by mosquitoes and is fought with insecticides (to kill the mosquitoes) and drugs (to kill the parasites in bloodstream of sufferers).

Here, Dr. Hamet, member of a WHO assisted Iranian national malaria eradication team, examines a boy of the Courjii tribe suffering from malaria.

IN TUBERCULOSIS:

The drop in tuberculosis mortality in the 5 countries, Puerto Rico, Chile, Uruguay, Venezuela, and the United States is impressive and bears witness to the great efforts undertaken by the national health administrations in order to combat this disease, through the use of BCG vaccine and new anti-tuberculosis drugs (streptomycin, isoniazid, PAS).

Up to December 31, 1964, more than 433 million people have been tuberculin-tested, and of these more than 169 million have been BCG vaccinated in the WHO-UNICEF BCG vaccination program, covering over 60 countries and territories. (17)

In 1964, 12 million children received BCG vaccine, and 162 million children now are protected against TB in 64 countries. (17)

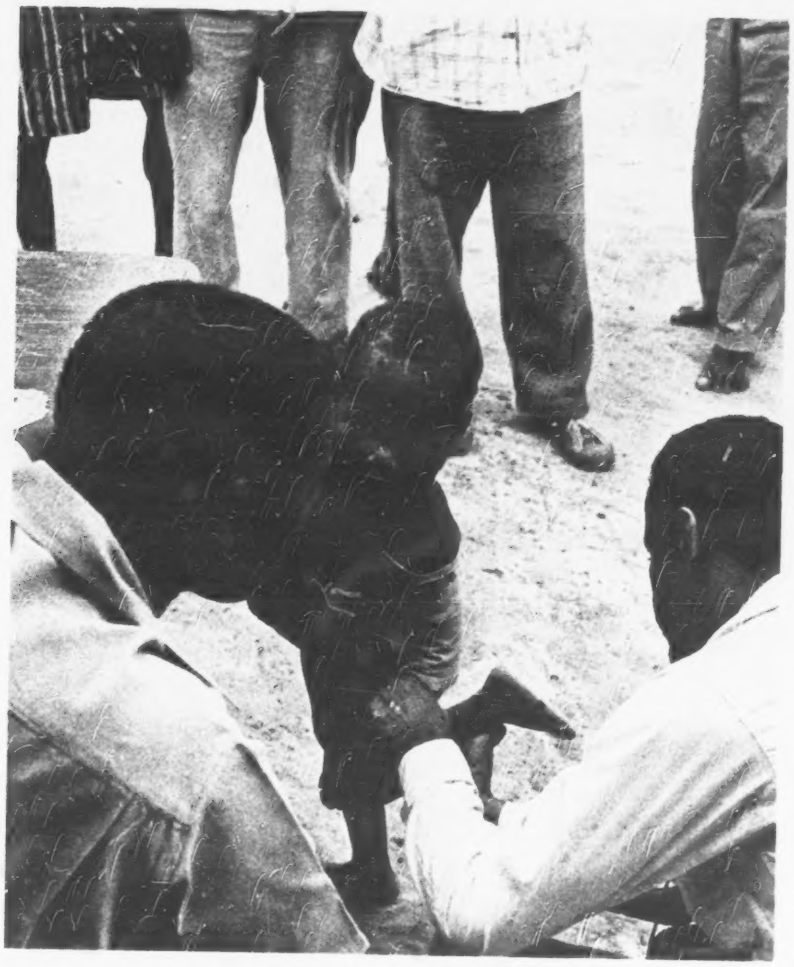
IN SMALLPOX:

Cases of smallpox are still counted in tens of thousands every year worldwide. Since the eradication program was launched by WHO in 1959, about 12 countries have eradicated smallpox. World eradication might be achieved within 10 years for an international expenditure of about $30 million according to a recent estimate made by WHO. Up to 50 million doses of freeze-dried vaccine are needed annually, in addition to supplies locally produced or already being provided through bilateral agreements. (17)

IN YAWS:

The systematic case finding and treatment of yaws have considerably reduced this disease, which can be completely cured by a single injection of penicillin.

Some 45 countries and territories have been involved in mass campaigns: 134 million people were examined during preliminary surveys; 350 million examinations took place during the entire initial and control stages and 43 millions were treated. But there is still more to be done: 50-60 millions, of which 10-15 millions are infected, still live in endemic areas where as yet no intensive efforts have been made. The great hope in the medical research field is the cultivation of pathogenic treponemes followed by the development of an effective vaccine. (17)



The first victims of yaws are always the children. Yaws is the disease of poverty and filth. Transmitted by mere contact it first attacks children, leaving sores all over the body, disfiguring the face, draining away energy. Yaws may even cripple for life.

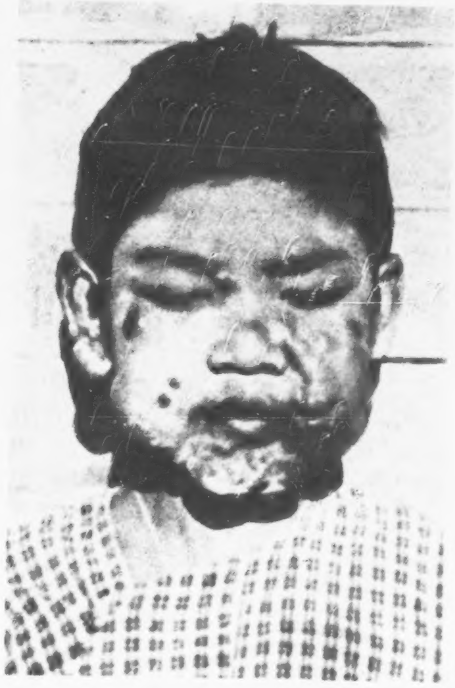
IN TRACHOMA:

Some 400 million people, 1/6 of the world's population, are victims of trachoma, a painful eye infection causing damage to the eyelids and cornea, which in turn can produce scar formations, deformity, and total or partial blindness.

Not until the discovery of antibiotics was control of these diseases possible. Now, the application of aureomycin or terramycin ointment is helping to cure millions of victims.

IN LEPROSY:

Leprosy afflicts about 10 million sufferers throughout the world, of which only about 20% receive treatment of any kind. A number of sulfone drugs, developed in recent years (such as promin, diasone and sulphetrone) have proven successful and are now the treatment of choice against leprosy. The shortage of personnel for leprosy campaigns is one of the biggest difficulties in arranging leprosy control projects in countries in which leprosy is an important problem.



Before treatment

Before and after sulfone treatment for leprosy. There are still millions of cases in the world, but now few need to be hospitalized. As the stigma disappears there are more volunteer patients.

After treatment

Other communicable diseases for which specific goals have been set in research or control are smallpox, bilharziasis (schistosomiasis), onchocerciasis (river blindness), and trypanosomiasis (sleeping sickness). Effective application of present knowledge about these diseases is needed.

WHAT ARE THE MAIN CAUSES OF DEATH IN THE UNDER-DEVELOPED COUNTRIES?

While reliable data are not available for many countries on the number and causes of death, existing data of the World Health Organization show that malaria, pneumonia, tuberculosis, gastritis (including duodenitis, enteritis, colitis) and other infectious and parasitic diseases represent the diseases causing the greatest death toll in the under-developed countries. The knowledge to control or prevent these diseases is known but is not being applied widely and effectively enough.

WHAT ARE THE MAIN CAUSES OF DEATHS IN THE WESTERN WORLD?

According to the World Health Organization, the leading causes of death are the same in all countries possessing reliable data:

1. Heart diseases ("heart attack") - basic cause is arteriosclerosis.
2. Cancer
3. Vascular lesions ("stroke") - basic cause is arteriosclerosis.

HOW MANY MOTHERS AND INFANTS DIE EACH YEAR IN THE U.S.A. ?

Estimated 1965 Maternal and Infant Deaths:	
Maternal deaths	1,150
Infant deaths (under one year of age) About 71% (66,172) died during first 28 days.	93,200
	94,350

WHAT ARE THE MAIN CAUSES OF DEATH IN THE UNITED STATES?

Causes of Death	Estimated 1965 Deaths	% of Total Deaths	
1. Cardiovascular-renal diseases Of these 999,850 deaths, arterio-sclerosis caused 917,060, of which 203,330 were "strokes", 66,810 were hypertension	999,850	55%	71% of Total
2. Cancer	296,320	16%	
3. Accidents	106,900	6%	
4. Pneumonia, except pneumonia of newborn, and Influenza (2,150 deaths)	61,460	3%	
5. Certain diseases of early infancy (birth injuries, postnatal asphyxia, atelectasis,* infections of newborn)	55,060	3%	
6. Diabetes mellitus	33,170	2%	
7. Bronchitis & other bronchopulmonic diseases**	32,670	2%	
8. Cirrhosis of liver	24,240	1%	
9. Suicide	22,560	1%	
10. Congenital malformations	19,730	1%	
11. Ulcer of stomach & duodenum	10,560	0.6%	
12. Homicide	10,340	0.6%	
13. Hernia, intestinal obstruction	9,720	0.5%	
14. Infections of Kidney	9,550	0.5%	
15. Tuberculosis	7,920	0.4%	
	1,700,050		
Estimated deaths from all other causes	+ 124,950	7.4%	
Total estimated deaths, 1965	1,825,000	100.0%	

(Estimated death rate per 1,000 population, 1965 - 9.4)

*Imperfect expansion of the lungs at birth; partial collapse of the lung.

**Includes other chronic interstitial pneumonia, bronchiectasis, pulmonary collapse (1 yr. and over), emphysema without bronchitis.

HOW MANY PEOPLE HAVE SOME CHRONIC AILMENT?

A recently published National Health Survey report states that 84 million or 45% of the civilian, non-institutionalized population of the United States have some chronic ailment.

About 53.2 million persons were injured during the year, July 1, 1963-June 30, 1964, a rate of 28.6 per 100 persons. (39)

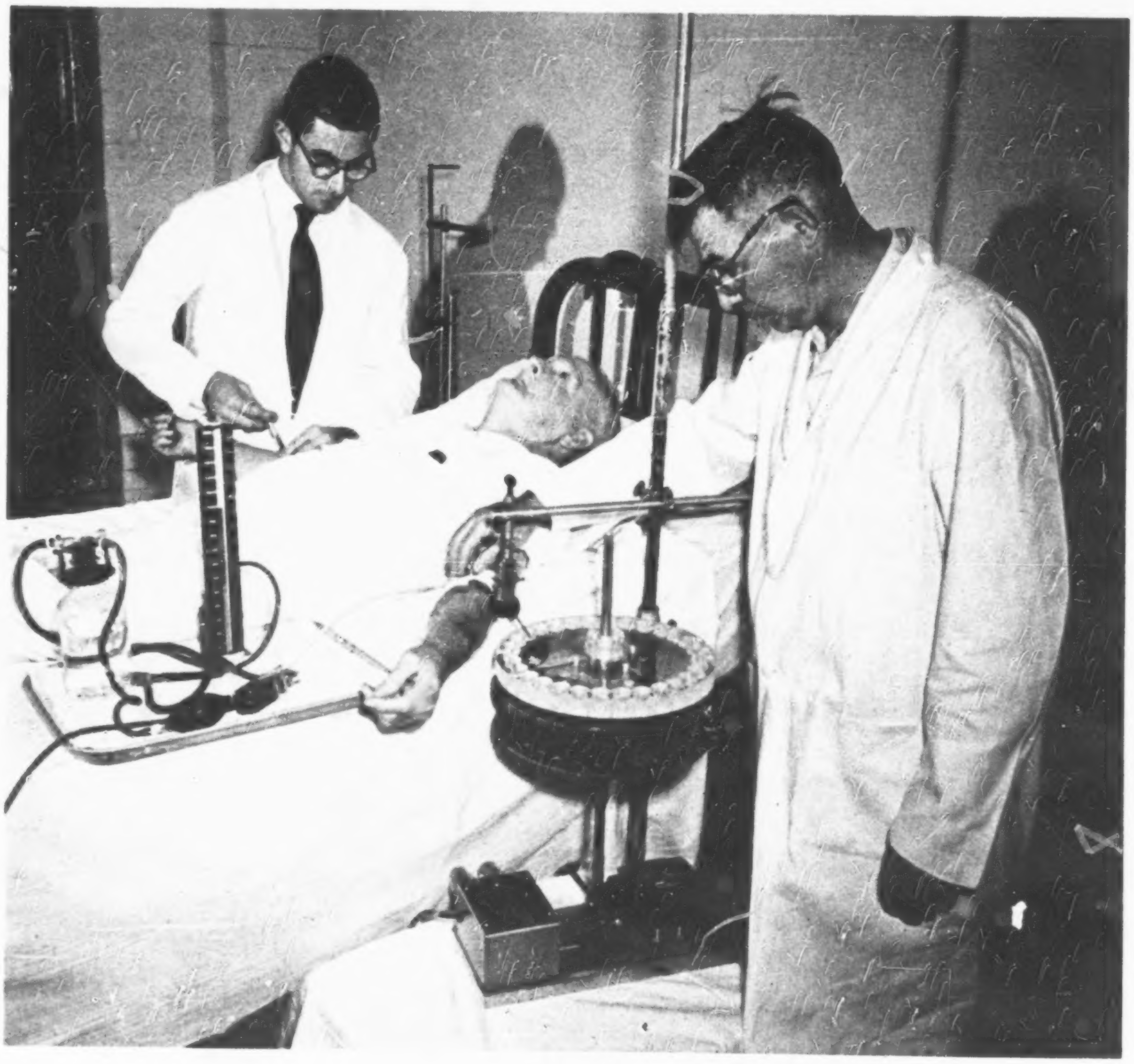
People in the U.S. experienced an average of 16.2 days of restricted activity during the year July 1963-June 1964 because of illness or injury. (39)

WHAT ARE THE MAIN CAUSES OF DISABILITY IN THE UNITED STATES?

		Estimated No. of People Afflicted (in some degree)
1. Mental and emotional disorders		19,000,000 (18)
2. Diseases of heart and circulation, including cerebrovascular diseases (mainly due to arteriosclerosis)		16,421,000 (37)
3. Arthritis and rheumatic diseases		13,000,000 (20)
4. Neurological disorders		10,000,000 (22)
Including:		
Epilepsy	1,800,000	
Cerebral palsy	550,000	
Multiple sclerosis & other demyelinating diseases	500,000	
Parkinsonism	500,000	
Muscular dystrophy	200,000	
5. Hearing impairments		6,231,000 (21)
6. Mentally retarded		5,400,000
7. Visual impairments		3,500,000 (21)
Legally blind - 416,400 (25)		
12 million children need eye care (25)		
8. Diabetes mellitus		1,500,000 (23)
9. Cancer (estimated under treatment now)		870,000 (11)

WHAT DOES ILLNESS COST THE UNITED STATES?

1. According to the National Health Survey, 240.5 million days were lost from work because of acute illness by all persons 17 years and over during the year July 1964-June 1965. Of these 240.5 million days lost from work: (26)



The estimated private expenditures for health and medical services in the U.S. in 1964 totaled $26.4 billion. (3)

WHAT DOES ILLNESS COST THE UNITED STATES? $30 BILLION

Days lost from work because of acute conditions:	Estimated Wage Loss*
100.8 million caused by respiratory conditions	$1,008,000,000.
74.5 million caused by injuries	$ 745,000,000.
14.7 million caused by digestive diseases	$ 147,000,000.
18.1 million caused by infective & parasitic diseases	$ 181,000,000.
32.4 million caused by all other acute conditions	$ 324,000,000.
Total estimated wage loss from acute conditions	$2,405,000,000.

2. The National Center for Health Statistics further reports that for the year July 1963-June 1964, a total of 385,189,000 days were lost from work by currently employed persons because of illness or injury from all causes. (24)

At the minimum daily wage of $10, this represents a loss in wages of $3,851,890,000.

3. Add to this the private expenditures for health and medical services of $26.4 billion in 1964 for a grand total of $30 billion in one year alone....almost three times the interest to be paid on the Public Debt in that year. (3)

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*Based on minimum daily wage of $10 (8 hours at $1.25 per hour).

US TREASURY

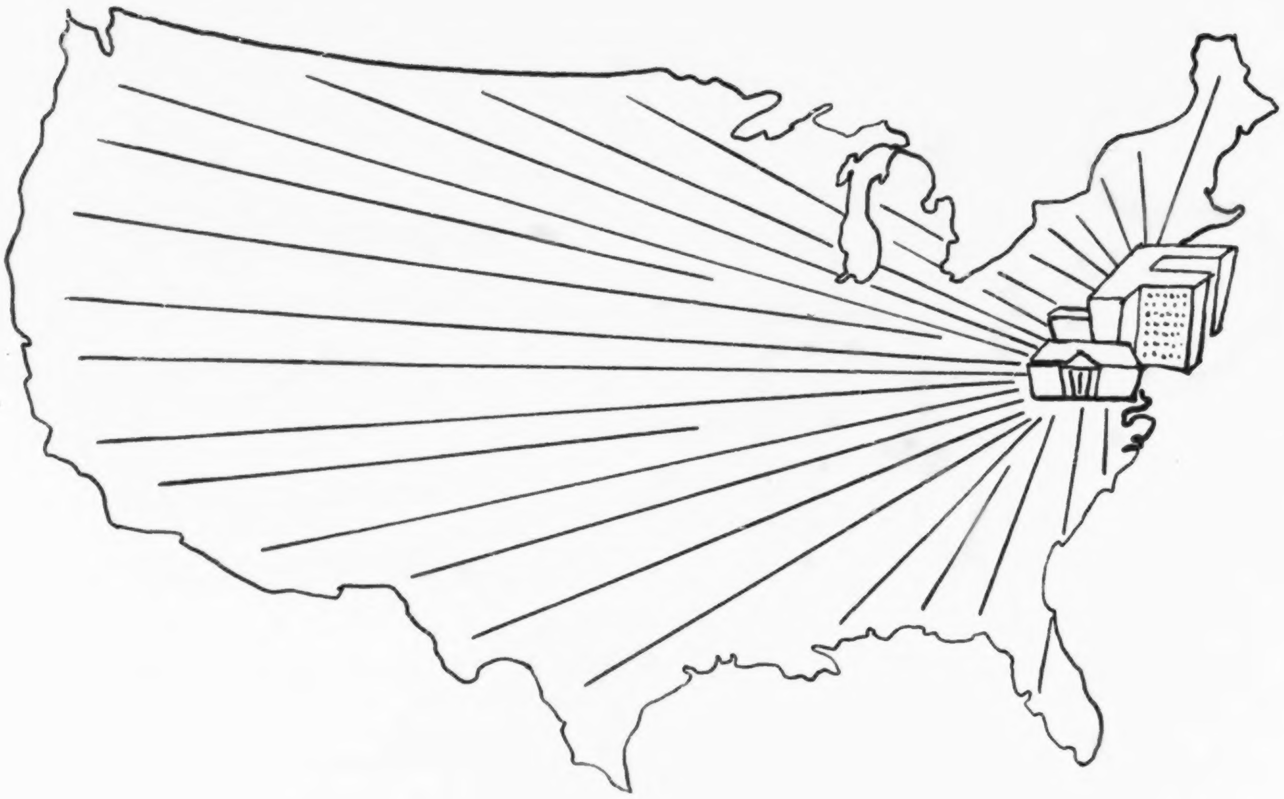
HOW MUCH DO THE PEOPLE WHOSE LIVES HAVE BEEN SAVED BY MEDICAL RESEARCH REPAY THE FEDERAL GOVERNMENT?

$1,354,164,688, plus the increase in revenue due to reduction in disabilities which cannot be estimated. (27)

Vast numbers of disabilities which would have been caused by polio, influenza, appendicitis, syphilis, anemias, dysentery, acute rheumatic fever, hypertensive heart disease, acute nephritis, whooping cough, and tuberculosis have been eliminated or reduced due to new drugs and vaccines, and billions in income added to the gross national product and income taxes. The development of the polio vaccines alone has meant the saving of human usefulness, in terms of probable lifetime earnings, in excess of $1 billion. (13)

The decline in the death rate since 1944 has meant the saving of 3,291,280 lives (this many more people would have died if the 1944 death rate had prevailed through 1964.) (27)

An estimated 1,217,774 wage earners in this group earned $8,037,308,400 in income in 1964 alone, on which they paid to the Federal Treasury in income and excise taxes for that year an estimated $1,354,164,688. (27)



The National Institutes of Health of the U.S. Public Health Service:

National Cancer Institute

National Heart Institute

National Institute of Mental Health

National Institute of Arthritis and Metabolic Diseases

National Institute of Neurological Diseases and Blindness

National Institute of Allergy and Infectious Diseases

National Institute of Dental Research

National Institute of Child Health & Human Development

National Institute of General Medical Sciences

The Institutes administer intramural research programs at Bethesda, Maryland, as well as research grants, research fellowships and training grants and funds for the construction of research facilities at hundreds of medical schools and centers throughout the country. Foreign grants are also made on a limited basis.

Research grants and awards to other countries, fiscal 1964 $ 19,906,010.

WHAT DID THE U.S. PUBLIC HEALTH SERVICE SPEND THROUGH THE NATIONAL INSTITUTES OF HEALTH?

In fiscal 1966, the U.S. Public Health Service will spend through the National Institutes of Health $1,244,406,000 to find new treatments and cures for cancer, the cardiovascular diseases, mental illnesses, arthritis and metabolic diseases, neurological and blinding eye diseases, allergic and infectious diseases, dental disorders.

HOW WAS THIS MONEY REPAID?

Thus, the funds spent in fiscal 1966 for research and training by the National Institutes of Health of the Public Health Service were repaid over 100% to the Federal Government in 1964 by the Federal income and excise taxes of individuals whose lives were saved due to medical research successes in the last 20 years, to say nothing of taxes paid by those who would otherwise be disabled.

Income realized and tax revenue paid by people who would have been disabled had it not been for these medical research advances, but who received treatment with new drugs, vaccines and other therapies in time to prevent long-term disability, are incalculable and very much larger.

The increase in production and gross national product of the U.S. due to the prevention of these deaths and disabilities is so great that it cannot be accurately estimated. Our gross national product has increased from $211.4 billion in 1944 to $622.6 billion in 1964.

IN 1964 MAJOR VOLUNTARY HEALTH AGENCIES SPENT ON AN AVERAGE:

RESEARCH

26.7%

$36,634,270.

CARE AND

EDUCATION

73.3%

$100,537,276.

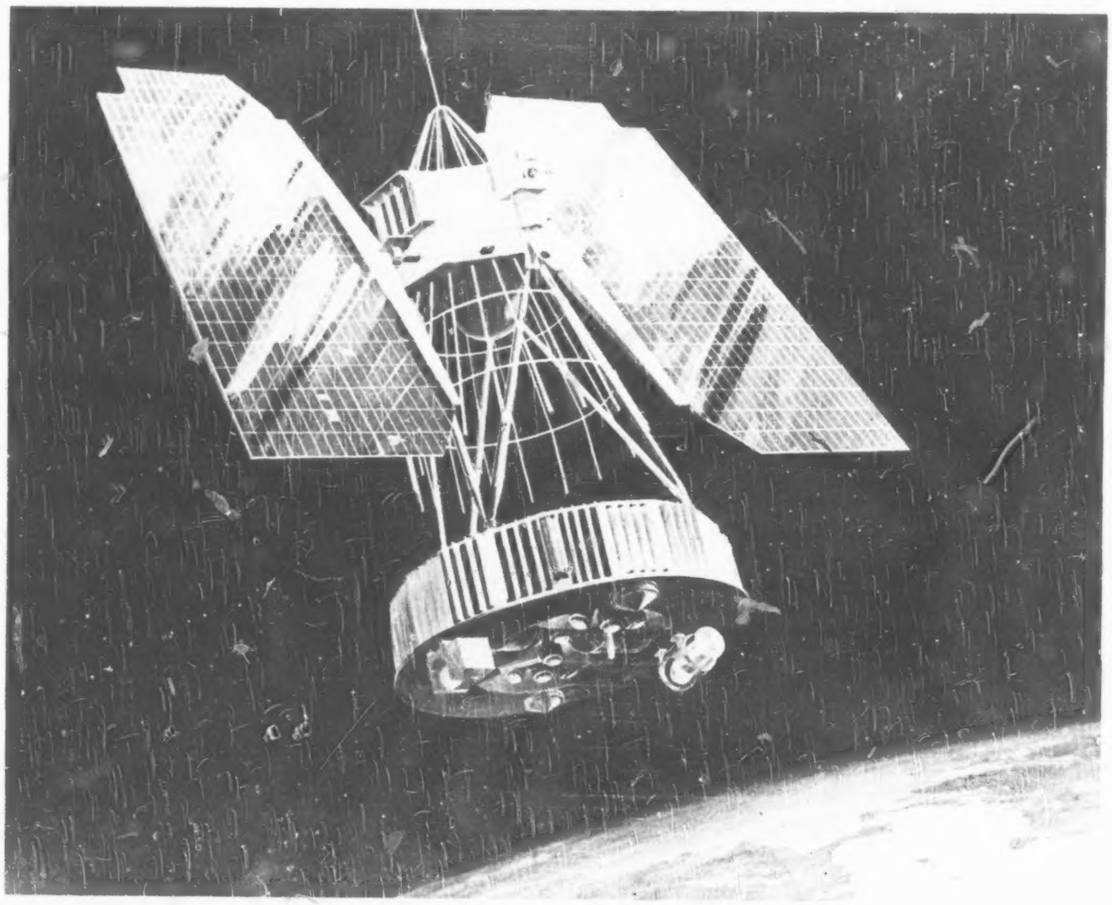
HOW MUCH DID THE MAJOR VOLUNTARY HEALTH AGENCIES RAISE AND ALLOCATE TO RESEARCH IN 1963 AGAINST THE MAJOR KILLERS AND CRIPPLERS?

		1964	
Agency	Funds Raised	Allocated To Research	% Allocated To Research
American Cancer Society	$ 43,775,341	$ 14,993,368	34%
The National Foundation	23,680,585	3,908,723	16.5%
American Heart Association	30,121,526	10,063,961 #	33%
United Cerebral Palsy	11,200,000	711,159	6%
Nat'l Association for Mental Health	8,399,000	336,014	4%
Muscular Dystrophy Assoc.	5,774,619	1,920,213	33%
Arthritis & Rheumatism Foundation	5,690,000	1,443,040	25%
Nat'l Multiple Sclerosis Society	4,117,855	595,838**	14%
Research to Prevent Blindness Committee	616,209	486,437	79%
Damon Runyon Memorial Fund for Cancer Research *	2,071,700	1,588,400	100%
Nat'l Society for the Prevention of Blindness	936,821	68,883	7%
Nat'l Council to Combat Blindness	383,788	278,574	72.6%
Deafness Research Foundation	404,099	239,700	59%
	$137,171,546	$ 36,634,270	26.7%

*All funds raised are used to support research
**National Office expenditure only.
#Allocated from funds raised in prior year

Note: Many of the voluntary agencies devote the greater part of their funds to patient care, service and education.

ONLY $123 MILLION TO PREVENT HEART DISEASE AS COMPARED



WITH $5. 6 BILLION TO SUPPORT VITAL SPACE EXPLORATION

HOW MUCH DOES THE U.S. PUBLIC HEALTH SERVICE SPEND FOR RESEARCH TO DEFEND US AGAINST ALL HEART DISEASES?

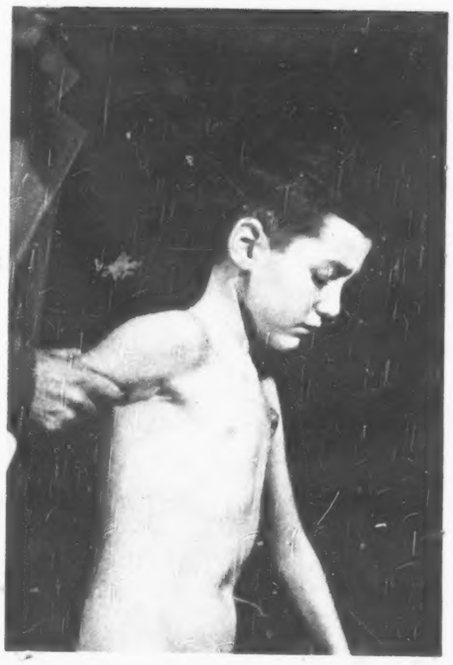
Only $123 million through the National Heart Institute for research projects, research fellowships, intra-mural research, collaborative studies, review and approval and program direction costs, fiscal 1966. In addition funds for training grants totaled $17 million.

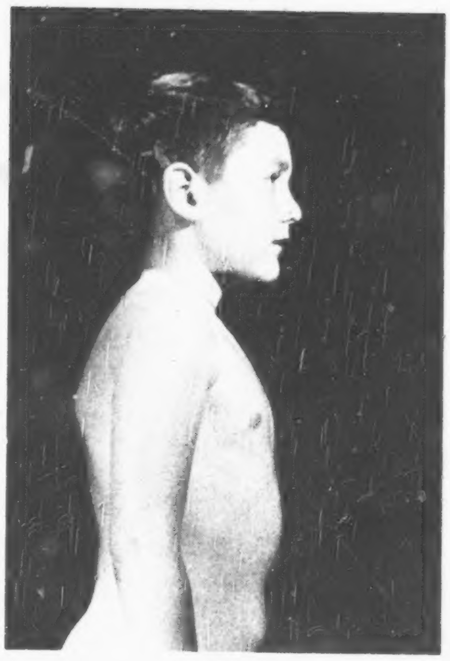
Cardiovascular-renal diseases, largely due to arteriosclerosis, are our No. 1 Killer in the U.S. today.

The incidence rate of clinical myocardial infarction (heart attack) is estimated at 1,000 to 1,500 cases per 100,000 middle-aged men per year, with 30% to 40% of first attacks acutely fatal. For the survivors of an acute attack, a minimum of 20% are dead in 5 years, with as many as 40% of high-risk cases dead in 5 years. (29)

HOW DOES THIS COMPARE WITH WHAT THE FEDERAL GOVERNMENT WISELY SPENDS FOR OUR SPACE EXPLORATION PROGRAM?

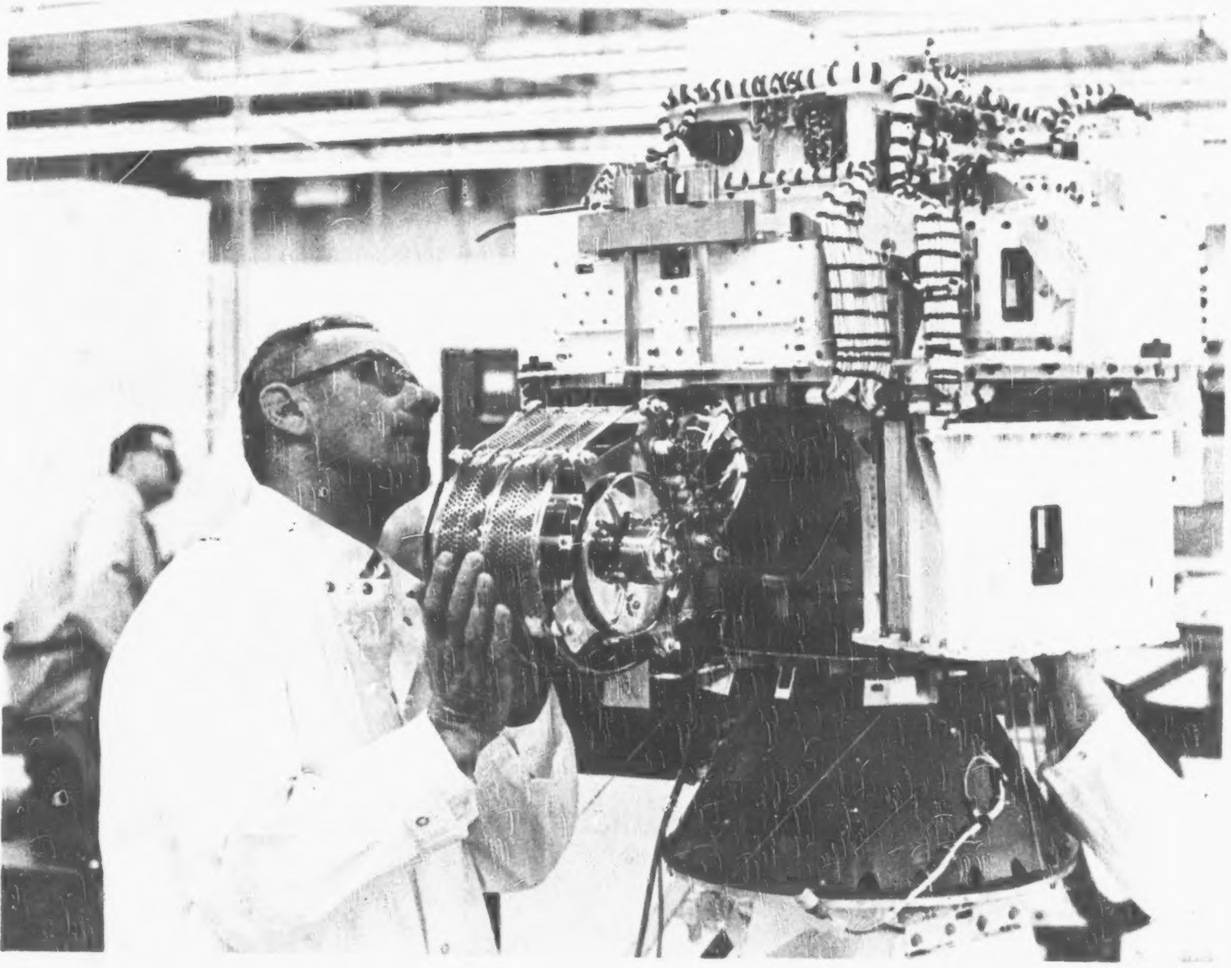
An estimated $5.6 billion was spent by the National Aeronautics and Space Administration in fiscal 1966 for the conduct of the non-military space programs of the United States, including the exploration of space and its utilization for peaceful purposes, and to conduct and support advanced research and development related to space and aeronautics in support of civilian and military requirements, (30) compared with $123 million which the National Heart Institute will spend for research against our No. 1 Killer.





Both these photographs are of the same 8½ year old boy who had been suffering with acute leukemia for about three months. Note that in the photograph on the left he cannot stand by himself because of destruction of much of his skeleton by the leukemic tumor. The photograph on the right was taken nine months later and shows the boy after return to a condition indistinguishable from normal produced by the action of a chemical agent taken by mouth. He is in complete remission. This is a striking temporary effect which greatly prolonged this boy's life but did not save it.

ONLY $153 MILLION TO PREVENT CANCER AS COMPARED WITH



$2 BILLION $964 MILLION TO SUPPORT NECESSARY MISSILE TESTING

HOW MUCH DOES THE U.S. PUBLIC HEALTH SERVICE SPEND FOR RESEARCH TO DEFEND US AGAINST CANCER?

Only $153 million through the National Cancer Institute for research projects, research fellowships, intramural research, collaborative studies, review and approval and program direction costs, fiscal 1966.

In addition, funds for training grants totaled $10.9 million.

Cancer is our No. 2 Killer, causing 296,300 deaths in 1965. This means that 30 men, women and children died from cancer every hour of every day during the year, or one death every two minutes!

HOW DOES THIS COMPARE WITH WHAT THE FEDERAL GOVERNMENT NECESSARILY SPENDS FOR THE DEVELOPMENT AND TESTING OF MISSILES AND RELATED EQUIPMENT?

$1 billion 964 million represents the fiscal 1966 estimated obligations of the Department of Defense for research, development, test, and evaluation of missiles of all types (30), compared with $153 million which the National Cancer Institute will spend for research against our second leading cause of death.

Before treatment

After treatment

ONLY $114 MILLION TO PREVENT MENTAL ILLNESSES AS COMPARED

WITH $221 MILLION TO SUPPORT NEEDED AGRICULTURAL RESEARCH

HOW MUCH DOES THE U. S. PUBLIC HEALTH SERVICE SPEND FOR RESEARCH TO DEFEND US AGAINST MENTAL ILLNESSES?

Only $114 million through the National Institute of Mental Health for research projects, research fellowships, intramural research, collaborative studies, review and approval and program direction costs, fiscal 1966.

In addition, funds for training grants totaled $86 million.

Mental illnesses afflict an estimated 19 million Americans (in some degree), fill every other hospital bed in the Nation, and cost over $5 billion annually. (31)

HOW DOES THIS COMPARE WITH WHAT THE FEDERAL GOVERNMENT USEFULLY SPENDS FOR ITS AGRICULTURAL RESEARCH SERVICE?

$221 million was appropriated in fiscal 1966 obligations for the Agricultural Research Service of the Department of Agriculture for agricultural research relating to production, utilization, nutrition and consumer use, to control and eradicate pests and plant and animal diseases, and to perform related inspection, quarantine and regulatory work, and meat inspection (30), compared with $114 million which the National Institute of Mental Health will spend for research against all mental illnesses.

ONLY $109 MILLION TO PREVENT ARTHRITIS & METABOLIC DISEASES AS COMPARED

WITH $216 MILLION TO SUPPORT USEFUL FOREST PROTECTION AND UTILIZATION

HOW MUCH DOES THE U.S. PUBLIC HEALTH SERVICE SPEND FOR RESEARCH TO DEFEND US AGAINST ARTHRITIS AND METABOLIC DISEASES?

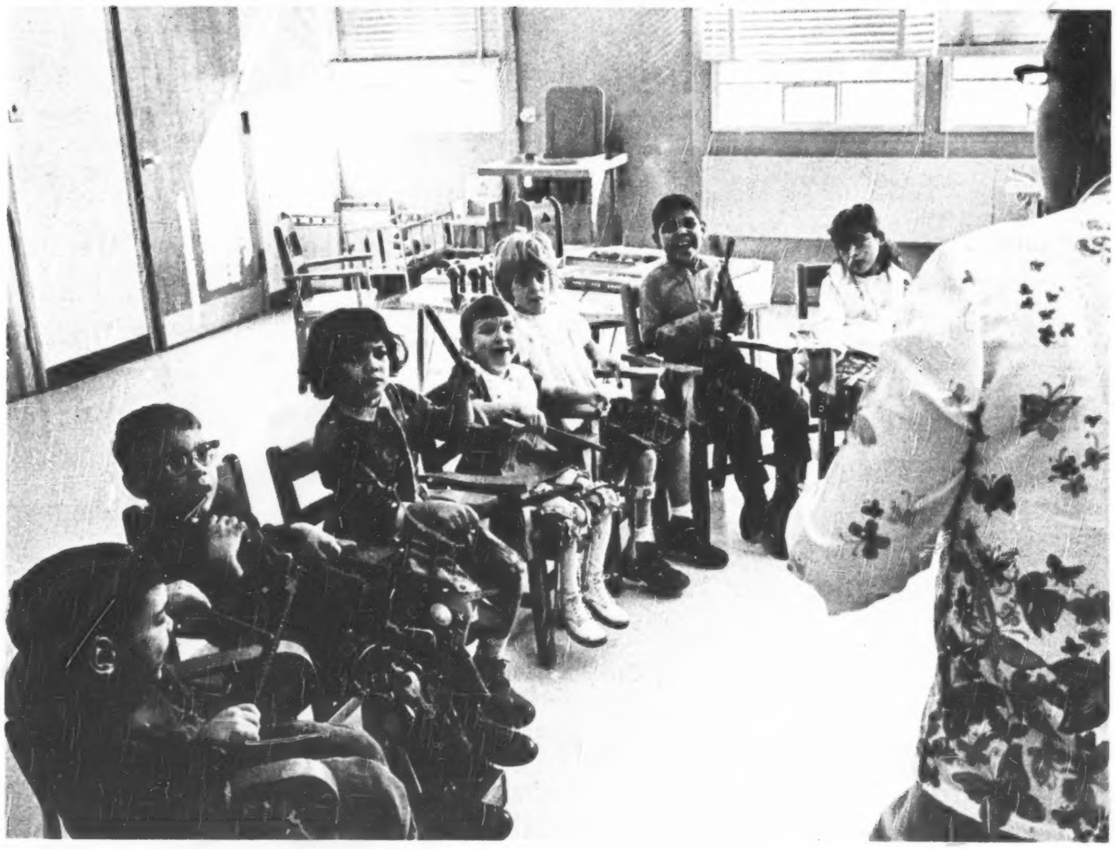
Only $109 million through the National Institute of Arthritis and Metabolic Diseases for research projects, research fellowships, intra-mural research, collaborative studies, review and approval and program direction costs, fiscal 1966.

In addition, funds for training grants totaled $14 million.

Arthritis and rheumatic diseases cripple (in varying degree) 13 million Americans (20); another 1.5 million people are victims of diabetes. Arthritis and rheumatism alone caused the loss of 12.1 million workdays in 1959-60. (19)

HOW DOES THIS COMPARE WITH WHAT THE FEDERAL GOVERNMENT ROUTINELY SPENDS FOR ITS FOREST PROTECTION AND UTILIZATION PROGRAMS?

$216 million was appropriated in fiscal 1966 for the Forest Service of the Department of Agriculture for forest protection and utilization programs (30), compared with $109 million which the National Institute of Arthritis and Metabolic Diseases will spend for research against such crippling and disabling diseases as arthritis, rheumatism, diabetes, and the digestive, nutritional and metabolic disorders.



ONLY $83 MILLION TO PREVENT NEUROLOGICAL AND SENSORY DISEASES

AS COMPARED WITH $98 MILLION TO SUPPORT NEEDED FISH AND WILDLIFE SERVICES.

HOW MUCH DOES THE U.S. PUBLIC HEALTH SERVICE SPEND FOR RESEARCH TO DEFEND US AGAINST NEUROLOGICAL DISEASES AND BLINDNESS?

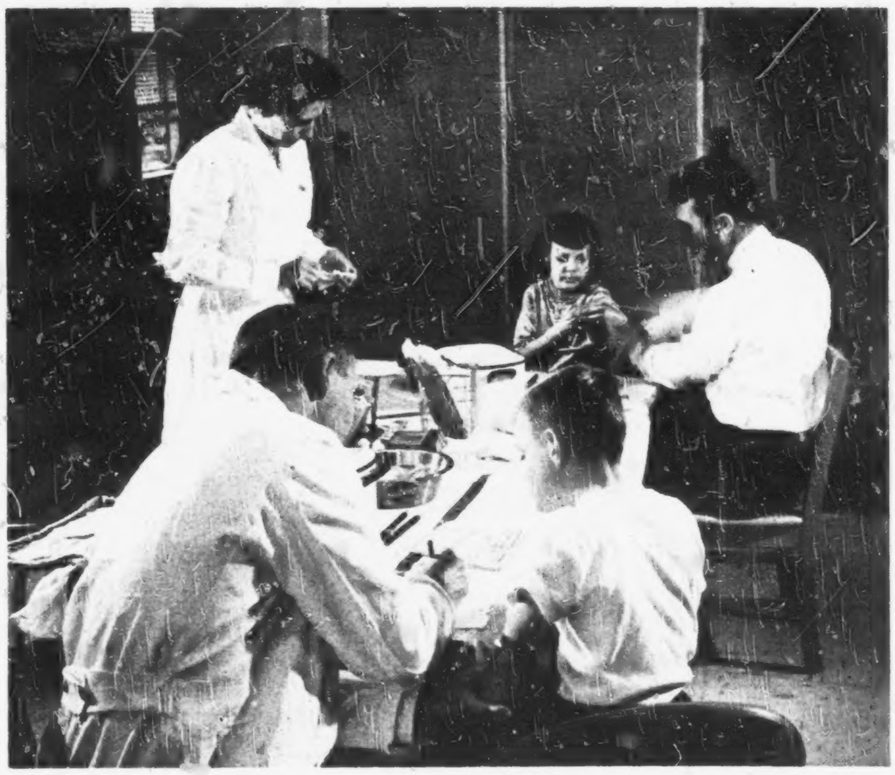
Only $83 million through the National Institute of Neurological Diseases and Blindness for research projects, research fellowships, intramural research, collaborative studies, review and approval and program direction costs, fiscal 1966. – In addition, funds for training grants totaled $18 million. - About $8,788,051 will be spent for research in disorders of vision during fiscal 1965 by the Institute.

Over ten million Americans are estimated to be disabled by such neurological disorders as epilepsy, cerebrovascular disease ("stroke"), cerebral palsy, parkinsonism, multiple sclerosis and other demyelinating diseases and muscular dystrophy. 6,231,000 Americans report hearing impairments (21), 3.5 million report visual impairments (21), 416,400 are legally blind (25), an est. 5,400,000 are mentally retarded.

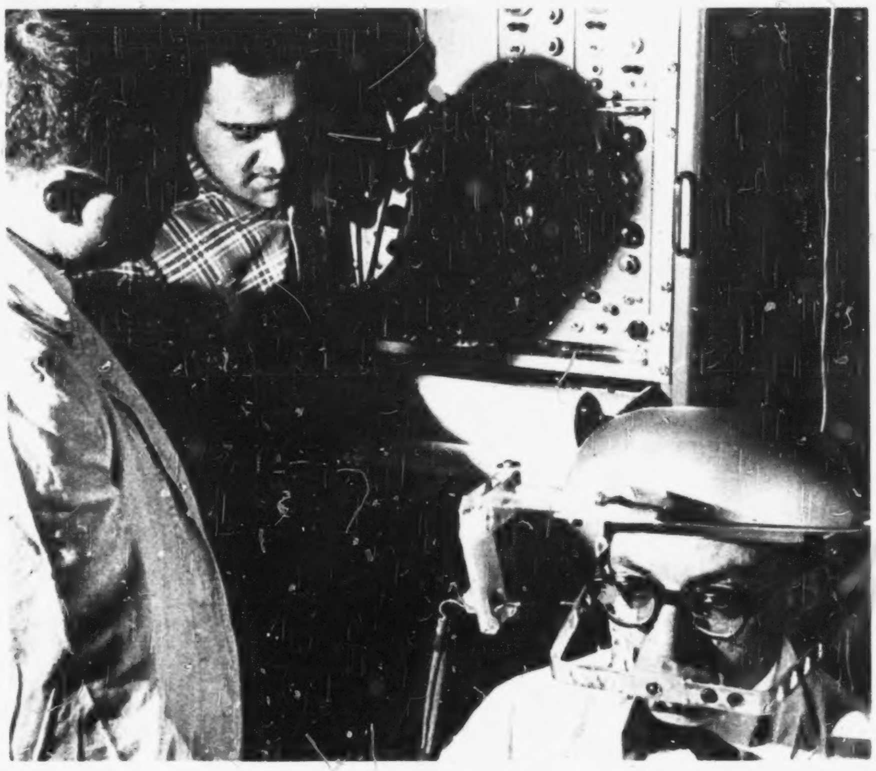
HOW DOES THIS COMPARE WITH WHAT THE FEDERAL GOVERNMENT CONSTRUCTIVELY SPENDS FOR ITS FISH AND WILDLIFE SERVICE?

$98 million was appropriated in fiscal 1966 to the Fish & Wildlife Service of the Department of the Interior to conduct research and management programs to conserve fish and wildlife resources for recreational and commercial use (30), compared with $83 million to be spent by the National Institute of Neurological Diseases and Blindness for research against all neurological and sensory disorders.

2



Only $69 million for research against allergies and infectious diseases



Only $18.5 million for research against dental disorders

HOW MUCH DOES THE FEDERAL GOVERNMENT SPEND FOR RESEARCH TO DEFEND US AGAINST --

ALLERGIES AND INFECTIOUS DISEASES?

$69 million through the National Institute of Allergy and Infectious Diseases for research projects, research fellowships, intramural research, collaborative studies, review and approval and program direction costs, fiscal 1966. In addition, training grant funds total $9 million.

CHILD HEALTH & HUMAN DEVELOPMENT?

$48 million through the National Institute of Child Health and Human Development for research projects, research fellowships, intramural research, review and approval and program direction costs, fiscal 1966. In addition, training grant funds totaled $8 million.

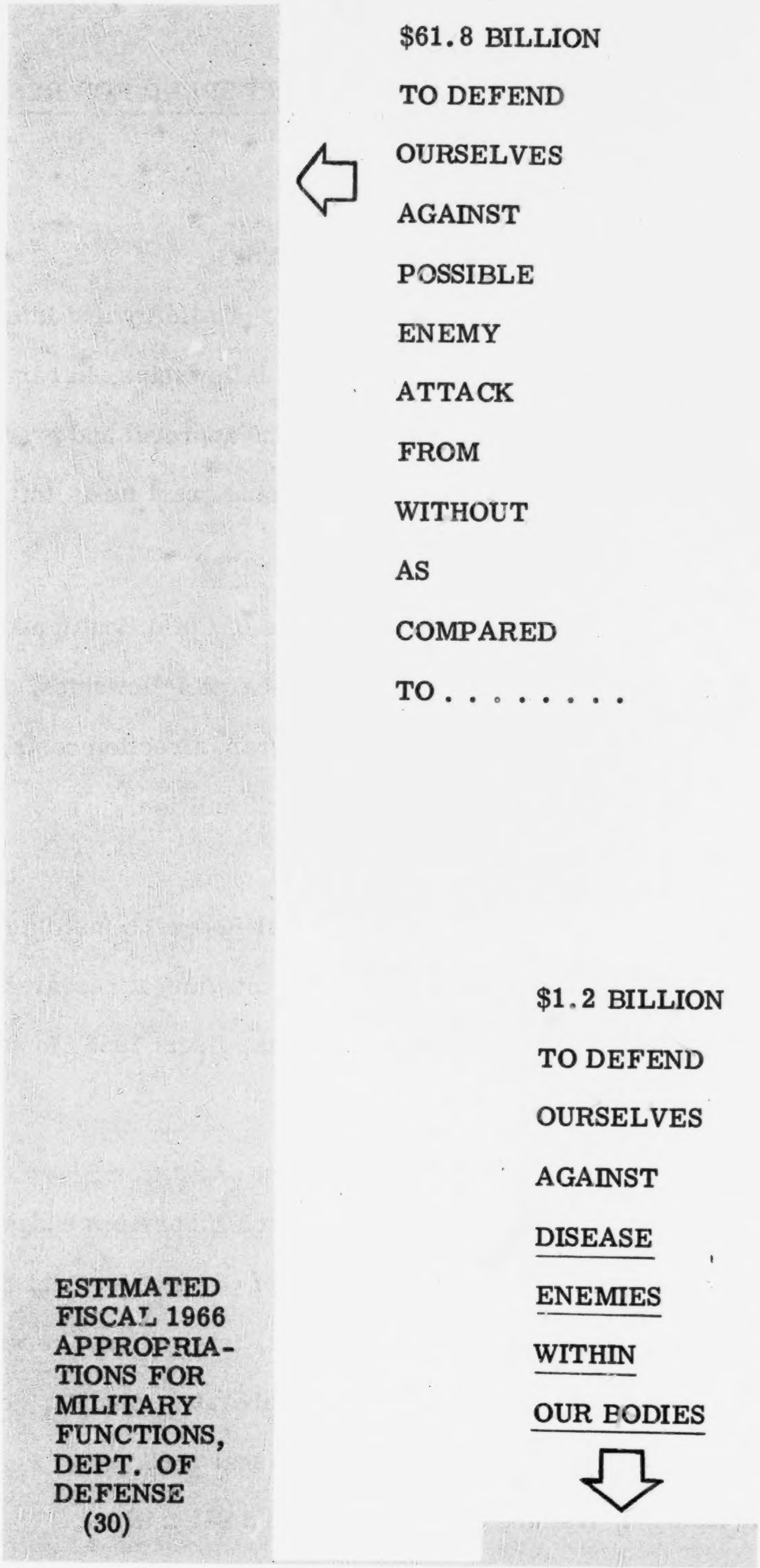
DENTAL DISORDERS?

$18.5 million through the National Dental Research Institute for research projects, research fellowships, intramural research, review and approval and program direction costs, fiscal 1966. In addition, training grant funds totaled $5 million.

OTHER DISEASE AREAS?

$146 million through the General Research & Services budget, including the newly established National Institute of General Medical Sciences, for research projects, research fellowships, international research grants, computer research and technology, collaborative studies, review and approval and program direction costs, fiscal 1966.

In addition, training grant funds totaled $41 million.



$61.8 BILLION
TO DEFEND
OURSELVES
AGAINST
POSSIBLE
ENEMY
ATTACK
FROM
WITHOUT
AS
COMPARED
TO . . . .

$1.2 BILLION
TO DEFEND
OURSELVES
AGAINST
DISEASE
ENEMIES
WITHIN
OUR BODIES

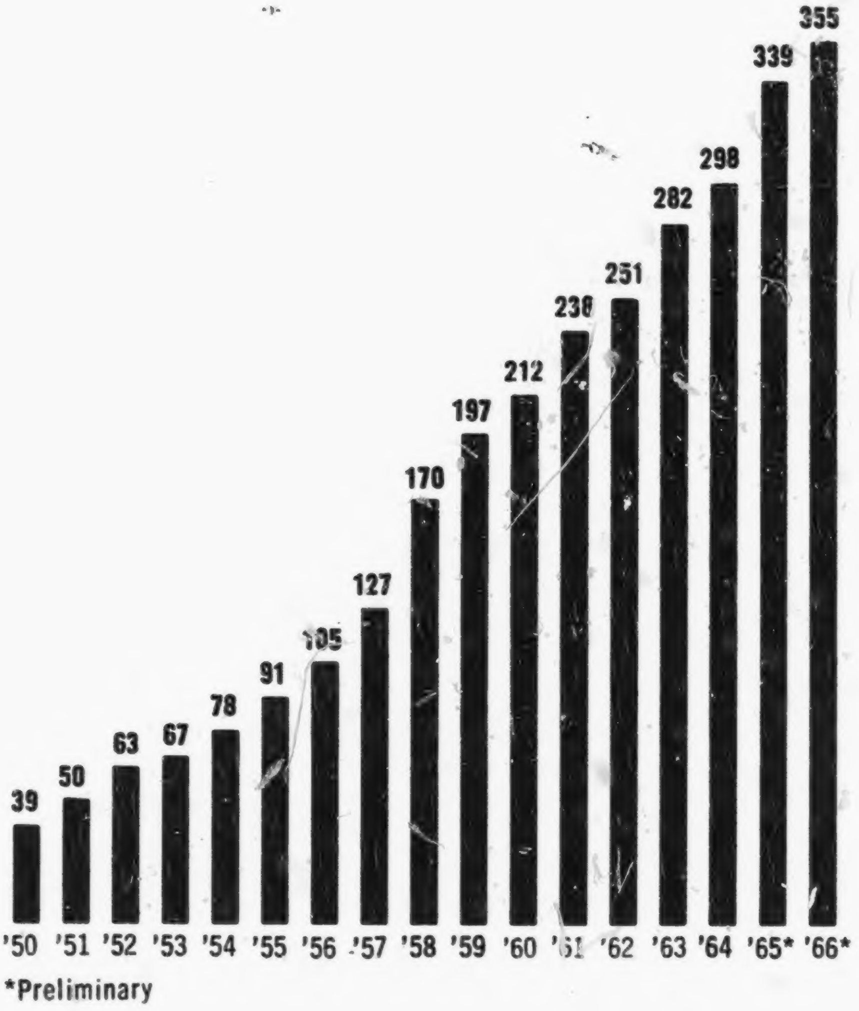
ESTIMATED
FISCAL 1966
APPROPRIATIONS FOR
MILITARY
FUNCTIONS,
DEPT. OF
DEFENSE
(30)

IN TOTAL, WHAT DOES THE FEDERAL GOVERNMENT SPEND THROUGH THE NATIONAL INSTITUTES OF HEALTH TO DEFEND US AGAINST ALL THE DISEASES THAT KILL AND CRIPPLE US?

Fiscal 1966 appropriations to the National Institutes of Health totaled $1.2 billion, as follows:

Grants	
Research projects	$ 602,596,000
Research fellowships ($56,330,000) and training grants ($209,699,000)	266,029,000
State control programs	6,750,000
Regional medical programs	24,000,000
Mental health staffing	18,899,000
	918,274,000
Direct Operations	
Intramural research	82,105,000
Collaborative studies	93,508,000
Professional and technical assistance	5,954,000
Review and approval of grants	18,224,000
Other	20,239,000
	220,030,000
	1,138,304,000
Community mental health construction grants	50,000,000
Health research facilities construction grants	56,293,000
	$1,244,597,000

RESEARCH AND DEVELOPMENT SPENDING BY THE DRUG INDUSTRY 1950-1966



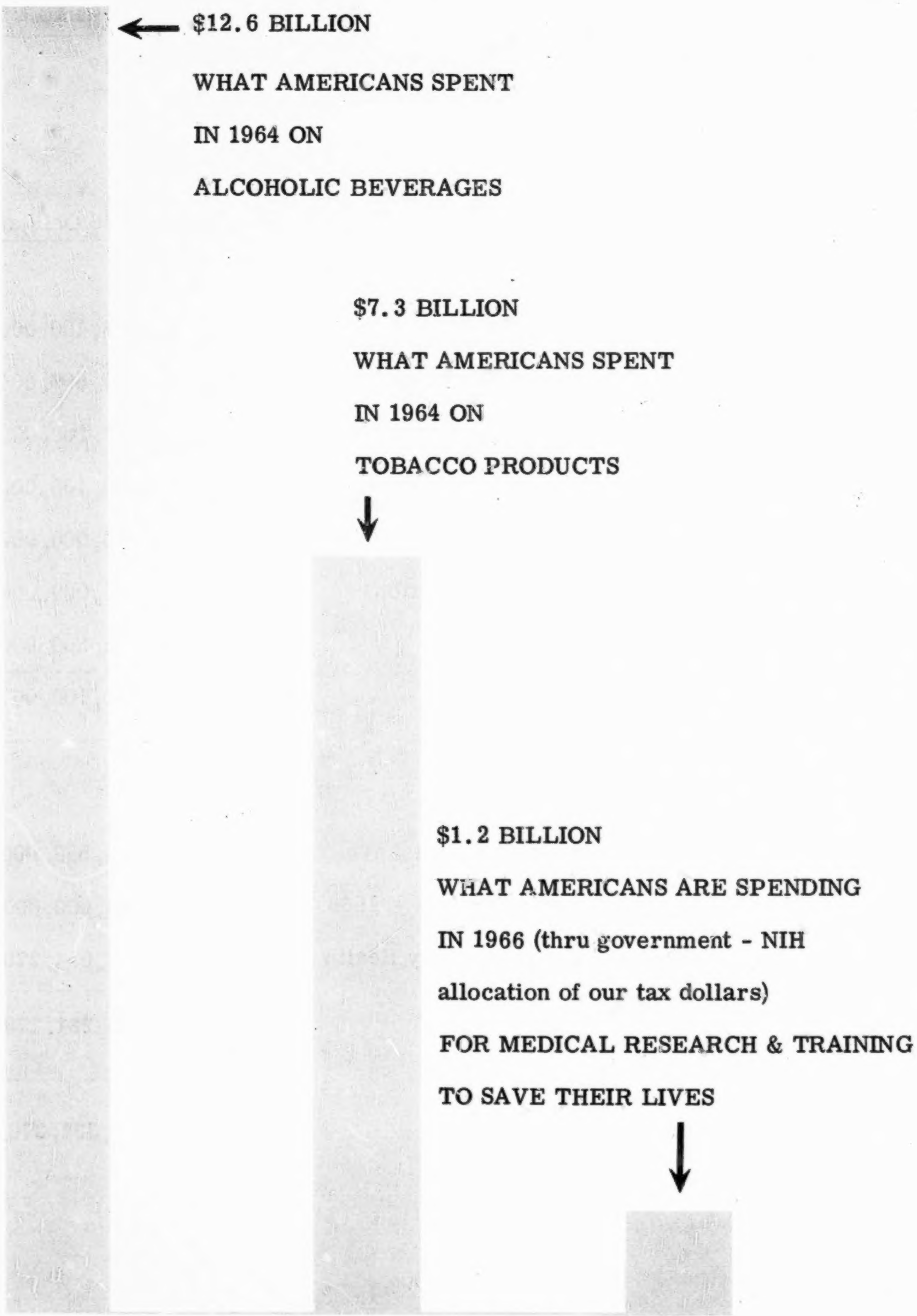
WHAT DOES THE PHARMACEUTICAL INDUSTRY SPEND FOR RESEARCH AGAINST THE MAJOR KILLING AND CRIPPLING DISEASES?

The Pharmaceutical Manufacturers Association estimates the prescription drug industry will spend $355 million in 1966 for research and development of drugs for human and animal use. Actual 1965 expenditures for these purposes totaled $339 million. (28)

Additionally, approximately one-sixth (or about $5.3 million) of the pharmaceutical industry annual public service contributions of $32 million is devoted to medical research by recipients of such funds--non-profit foundations, health agencies, medical schools, etc.

WHAT DO OTHER DEPARTMENTS OF THE FEDERAL GOVERNMENT SPEND ON MEDICAL AND "HEALTH RELATED" RESEARCH?

	Estimated Fiscal 1966 Obligations (30)
Department of Defense	$ 108,400,000
Atomic Energy Commission	94,600,000
Nat'l Aeronautics & Space Administration	79,100,000
Veterans Administration	50,400,000
Department of Agriculture	40,000,000
National Science Foundation	35,000,000
Other	3,600,000
	$ 411,100,000 (30)
PLUS	
Nat'l Institutes of Health	$1,244,597,000
Pharmaceutical Industry - 1966	355,000,000
Major National Voluntary Health Agencies	36,634,270
	$1,636,231,270
GRAND TOTAL	$2,047,331,270



$12.6 BILLION
WHAT AMERICANS SPENT
IN 1964 ON
ALCOHOLIC BEVERAGES

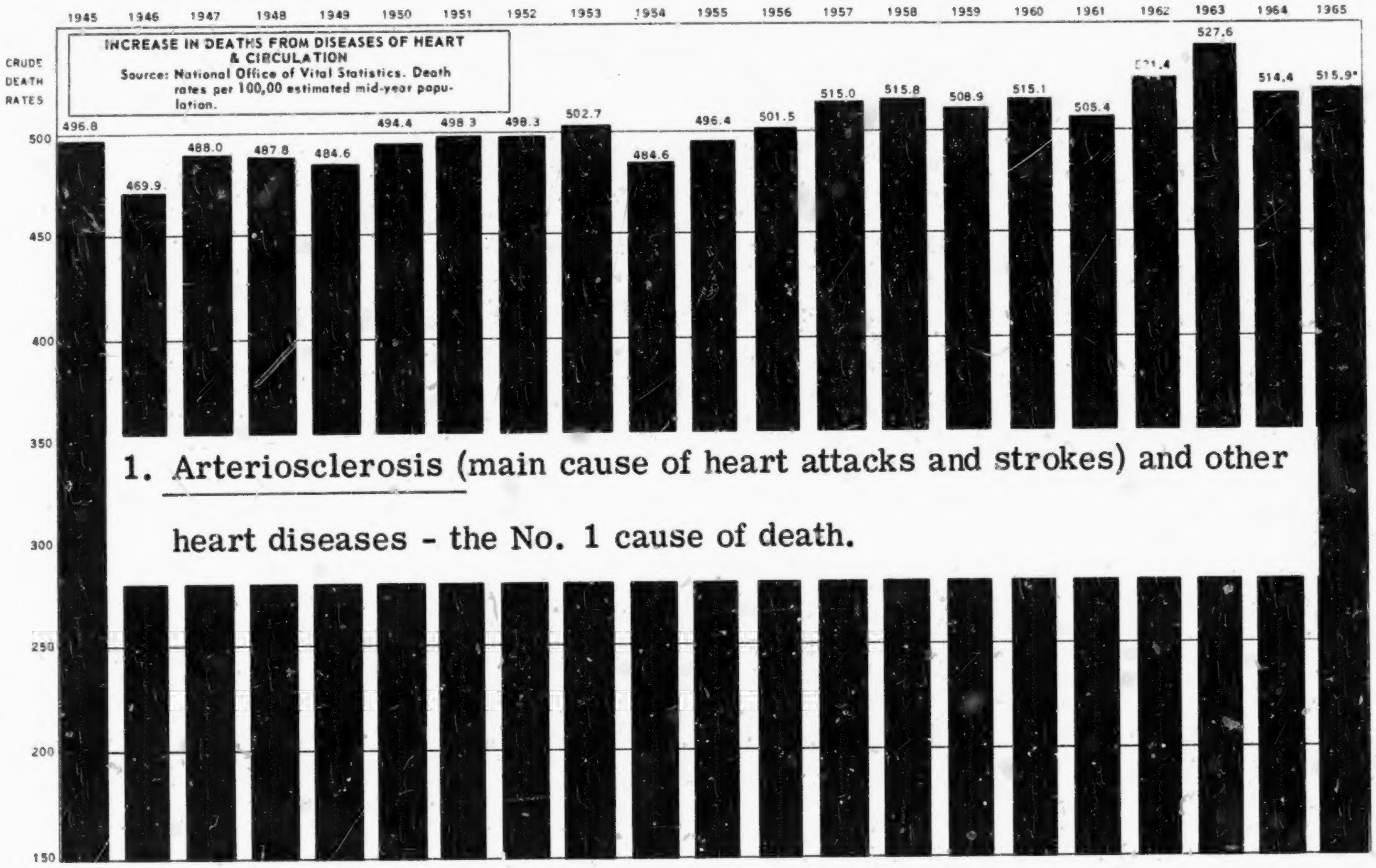
$7.3 BILLION
WHAT AMERICANS SPENT
IN 1964 ON
TOBACCO PRODUCTS

$1.2 BILLION
WHAT AMERICANS ARE SPENDING
IN 1966 (thru government - NIH
allocation of our tax dollars)
FOR MEDICAL RESEARCH & TRAINING
TO SAVE THEIR LIVES

WHAT DO WE AMERICANS SPEND TO INCREASE OUR COMFORT AND ENJOYMENT WHEN WE ARE HEALTHY? (33) - YEAR 1964.

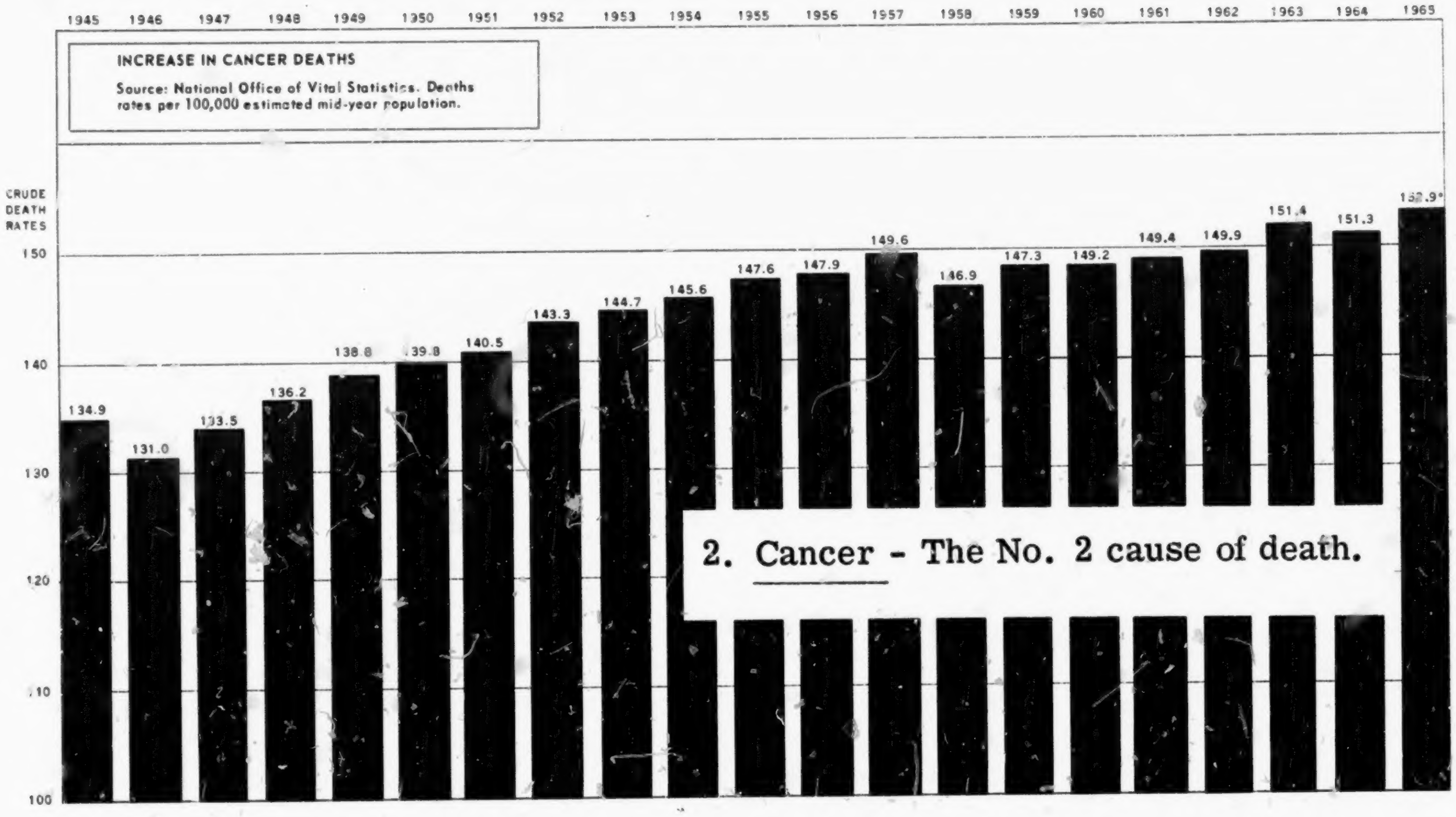
$12,630,060,000	Alcoholic beverages
$ 7,345,870,000	Tobacco products & smokers' accessories
$ 958,450,000	Boxed candy
$ 553,740,000	Greeting cards
$ 420,690,000	Aspirin & aspirin compounds (internal analgesics)
$ 406,320,000	Cough and cold items
$ 358,800,000	Chewing gum
$ 212,260,000	Hair spray fixatives
$ 202,630,000	Shampoos
$ 199,580,000	Ballpoint pens and refills
$ 174,190,000	Laxatives and cathartics
$ 174,140,000	Pocket size books
$ 165,060,000	Lipsticks
$ 145,390,000	Face creams
$ 141,980,000	Dieting aids
$ 134,370,000	Toilet water and cologne
$ 114,740,000	Mouth washes and gargles
$ 101,950,000	Hair coloring preparations
$ 83,480,000	Men's hair tonics
$ 79,090,000	Stomach sweeteners (antacids)
$ 75,120,000	Foot products
$ 59,270,000	Hand lotions and creams
$ 50,150,000	Pressed cake face powder
$ 48,760,000	Nail polish and enamel
$ 44,550,000	Make-up bases
$ 33,420,000	Suntan lotions and oils
$ 31,050,000	Elastic stockings
$ 30,020,000	Playing cards
$ 29,440,000	Bubble bath salts, tablets, oils, etc.
$ 25,290,000	Veterinary biologicals for pet use & other dog and pet medicaments
$ 20,930,000	Powder puffs
$ 8,960,000	Eye lotions and washes

WHAT ARE THE CHALLENGES THAT REMAIN?



1. Arteriosclerosis (main cause of heart attacks and strokes) and other heart diseases - the No. 1 cause of death.

*ESTIMATED



2. Cancer - The No. 2 cause of death.

*ESTIMATED

3. Mental illnesses - schizophrenia, depressions, drug addiction, alcoholism, and others.

4. Arthritis and rheumatic diseases, the metabolic diseases -- Diabetes, cirrhosis and other liver diseases, obesity and nutritional diseases, diseases of the blood, aplastic anemia, disorders of bone metabolism, diseases of the endocrine glands, digestive diseases such as ulcers, colitis, ileitis, diverticulitis, kidney and gall stones and other diseases of the kidneys.

5. Neurological and sensory diseases, including speech and hearing disorders, and epilepsy, parkinsonism, multiple sclerosis, muscular dystrophy, cerebral palsy; and major eye diseases, such as glaucoma, cataracts, uveitis, diabetic retinopathy, detached retina, etc.

6. Mental Retardation - which affects 3% of our entire population; an estimated 6 million Americans are mentally retarded.

7. Deaths associated with childbirth -- neonatal, fetal & maternal deaths.

8. Virus diseases -- hepatitis, new forms of influenza, the common cold and others.

9. Allergic diseases -- drug allergies, serum sickness, allergic skin disorders and others.

10. Tropical Diseases -- Infant diarrheal diseases, protein deficiency diseases, helminthic diseases (such as schistosomiasis, filariasis, onchocerciasis), cholera, leprosy, plague and trachoma.

The prime of life has been prolonged 20 years from 49 years in 1900 to 70 in 1965. What can we do to prolong it further and make them happy and healthy years?

YOU CAN HELP TOWARD THE LONGER, HAPPIER, PRODUCTIVE LIVES WE HOPE FOR... FREE FROM THESE DREAD KILLERS AND CRIPPLERS... THROUGH INCREASING OUR RESEARCH INVESTMENT TODAY!

YOU CAN:

1. By urging and contributing toward increased research funds for national and local voluntary health agencies.

2. By urging your Congressmen and Senators to appropriate increased research funds to the National Institutes of Health, U. S. Public Health Service, for cancer, heart diseases, mental illnesses, arthritis and metabolic diseases, neurological diseases and blindness, and to the Veterans Administration.

3. By urging your Governor, State and local health officers, the mayors and city council members of your major cities to provide funds for research and to cooperate with the universities, medical schools, and other research institutions within your state to expand research activities.

Remember:

Excerpts from A SPECIAL HEALTH MESSAGE FROM THE PRESIDENT OF THE UNITED STATES TO THE CONGRESS, March 1st, 1966.

"A Nation's greatness is measured by its concern for the health and welfare of its people. Throughout the history of our democracy, this commitment has grown and deepened.

"With (present) programs and those I am recommending today, we can move closer to attainment of our goals:

— to bring every child the care he needs to develop his capacity to the fullest.

— to reduce infant mortality, concentrating particularly on those minority groups whose death rate is highest.

— to eradicate major communicable diseases as a threat to life and health in the United States.

— to reduce the burden of mental illness, and mental retardation.

— to cut the toll of three great killers — heart disease, cancer and stroke.

"To insure continuing progress, we must:

— improve the administration of federal health activities.

— develop comprehensive health planning and services on the state and community level.

— strengthen our system of health care.

— train needed health workers.

— increase our research efforts.

— take additional steps to meet special health problems."

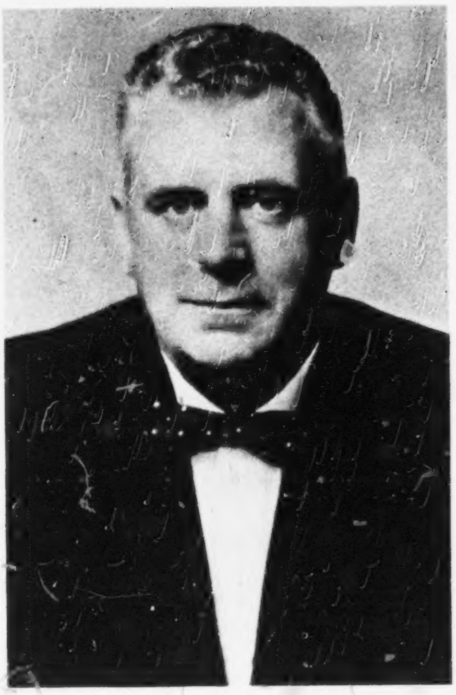
Remember:

Excerpts from speech by SENATOR LISTER HILL (Alabama) before AMERICAN DENTAL ASSOCIATION, Chicago, Illinois, August 13, 1966:

". . . We stand on the threshold of a momentous era — a Golden Age of Medicine.

"Over the past two decades, we have made more progress against disease and achieved more knowledge of the intricate mechanisms of the human body than in all the previous centuries of recorded medical history.

"If we accelerate our national investment in medical research and if we devote intensified efforts to the rapid application of clinical breakthroughs, I am confident that within a few years all of us will witness the reaching of a new plateau that will enable us to overcome many of the dread diseases that have plagued and baffled man through the ages."



From the Report of the Committee on Appropriations, U. S. House of Representatives, on Fiscal 1967 Appropriations to the Department of Health, Education, and Welfare; Representative John E. Fogarty (Rhode Island) as Chairman of the Subcommittee on Appropriations for the Department of Health, Education, and Welfare submitted the Report:

". . . The Committee feels, as it did last year, that the budget (for the National Institutes of Health) should make adequate provision for carrying forward the vitally important programs for which the Congress and the American people have repeatedly expressed their support, which have earned their confidence, and which are well on the way to fulfilling their hopes.

"The Committee believes that the maintenance of a stable medical research effort is clearly in the national interest and that this can only be achieved by providing at least a minimum annual increase in the funds for research-support programs to allow for the widening capability, the growing complexity and the rising costs of research. The Committee feels strongly that this general principle must be applied to the vitally important research programs of the National Institutes of Health."

Remember:

"... But what about someone who was born with a life expectancy of only 35 years and who can never forget that Death may visit him or his family at any time, and does, without even bothering to knock on the door? Most of mankind is surrounded by sickness and is helpless against disease. Whoever provides the tools to fight it will earn the gratitude and might win the allegiance of the multitude.

"... Taking stock of the human capital at his disposal, Lenin discovered that Russia's death rate was nearly twice that of the West and that the average citizen had a life expectancy of only 40 years. Though there is no record that he was distressed from a humanitarian point of view, it is clear that the Soviet leader could translate these figures into national output. Financial capital for development of Russia, he knew, could come only from the production of workers and peasants. First, they had to be educated and trained. If, after that investment, they were weakened by disease and doomed to a short life, the rate of capital accumulation would be so slow that the Communists would never build a modern industrial state short of a hundred years.

"... (Now) the Soviet Union ... had raised the heath of its people up to the level of the West. It had slashed the crude mortality rate about 75% since before the Revolution and by 1956, at 7.7 per 1,000 population, it was comparable to ours. At the same time, it had lengthened average life expectancy from about 40 years at the beginning of World War I to a claimed 67 years in 1956. This was within reaching distance of longevity in the United States, which in the same year stood at 69.5.

"... Because of our concentration on physical and financial capital, we are inclined to forget the importance of human capital, which is both the means and the end of industrialization. This concept of the relation between human capital and economic growth could turn out to be decisive as the Soviet sets forth to meet the rising expectations of Asia, Africa, the Middle East and even Latin America with a program of health, development and Communism."

Excerpts from an Address by JOHN T. CONNOR, President, Merck & Co., Inc., November 6, 1958, at the AMERICAN MANAGEMENT ASSOCIATION CONFERENCE ON THE SOVIET ECONOMIC OFFENSIVE, New York City. Mr. Connor is now Secretary of Commerce.

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(27) Out of a total civilian resident population in the U.S. in 1964 of 189,371,000 (Population Estimates, Current Population Reports, October 19, 1965, Series P-25, No. 319, Bureau of the Census, Washington, D.C.), 37% (70,357,000) were employed (reference 3 on employment).

Assuming the same percentage of employed prevailed among the 3,291,280 people saved since 1944, 1,217,774 people would thus have earned in one year about $8,037,308,400. ($6,600 median income in U.S. in 1964, according to Current Population Reports, Consumer Income, May 27, 1965, Series P-60, No. 44, Bureau of Census, Washington, D.C.)

On a $6,600 income, each would have paid about $914 in Federal income taxes if each claimed on the average 2 exemptions; the Federal Government has thus gained $1,113,045,436 in one year in income tax revenue.

Excise taxes in fiscal 1964 totaled an estimated $13,950,000,000, or about 3% of personal income in that year (1966 World Almanac and Book of Facts). Each of the 1,217,774 people earning $6,600 in 1964 would pay about 3% of this or $198 in Federal excise taxes, and the Federal Government gained in 1964 alone approximately $241,119,252 in excise tax revenue.

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PICTURE CREDITS

PAGE	
1	Ames Company, Inc.
10	Rose Laboratories
13	Endo Laboratories, Inc.
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17	Roswell Park Memorial Institute
19	National Institute of Allergy and Infectious Diseases
21	Arthritis Foundation
24	Epilepsy Association of America, Inc.
26	Dr. Hernando Cardona
27	World Health Organization
28	New York Tuberculosis and Health Association
30	World Health Organization
31	World Health Organization
35	Institute of Physical Medicine and Rehabilitation
37	Veterans Administration
43	American Cancer Society, Institute of Rehabilitation Medicine; and Medical World News
45	Eli Lilly and Company and Radio Corporation of America
47	Children's Cancer Research Foundation, Boston, Mass.; and Radio Corporation of America.
49	National Association for Mental Health
51	Arthritis Foundation and International Paper Company
53	United Cerebral Palsy and Department of Interior
55	National Institute of Dental Research and New York University
59	Pharmaceutical Manufacturers Association

WHAT ARE THE FACTS ABOUT

ARTERIOSCLEROSIS

MAIN CAUSE OF

"HEART ATTACKS" AND "STROKES"?

WHAT ARE THE FACTS ABOUT ARTERIOSCLEROSIS — MAIN CAUSE OF HEART ATTACKS AND STROKES — OUR NUMBER ONE KILLER?

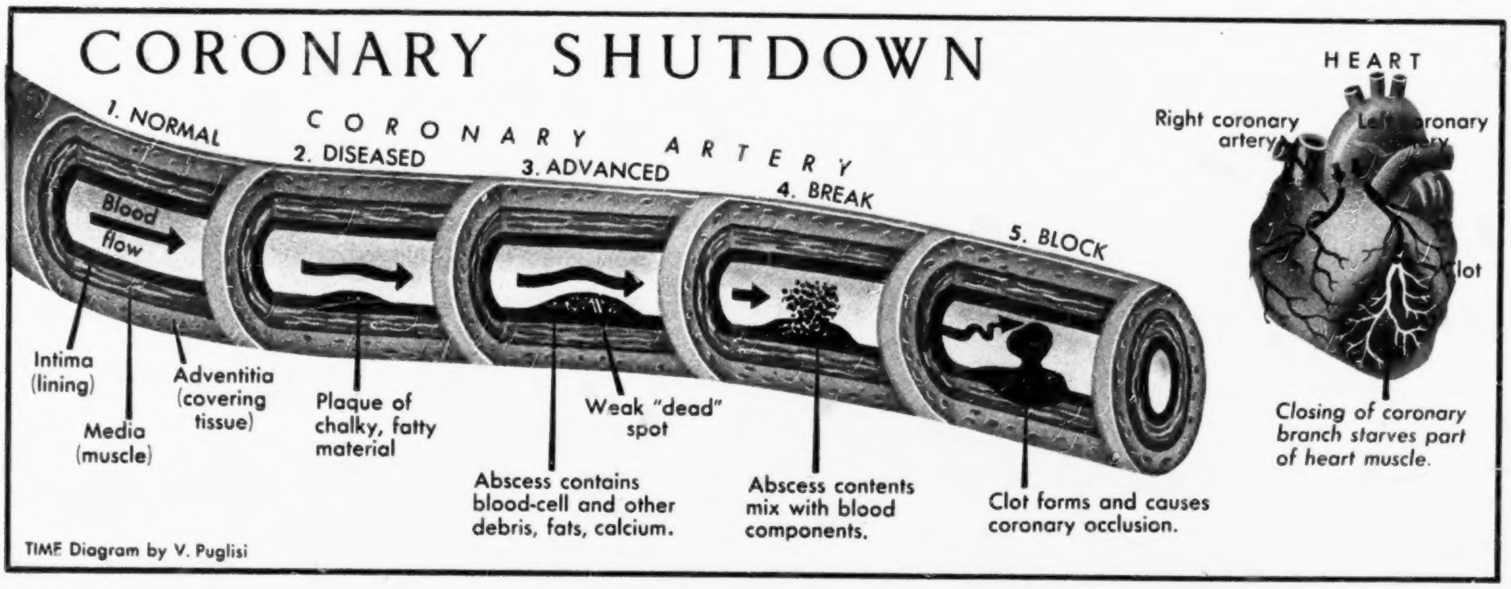
This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

WHAT IS ARTERIOSCLEROSIS?

1. Arteriosclerosis is "hardening of the arteries". This is a condition which impairs the functional elasticity of the blood vessel walls. It also reduces the volume of blood that may pass through the afflicted arteries. There are several types of arteriosclerosis. (1)
2. In one of the commonest forms (atherosclerosis), fatty substances, largely cholesterol, accumulate beneath the inner surfaces of arteries and tend to push the inner surfaces together. The caliber of the vessel is thereby reduced, a process that is further accentuated by subsequent thickening and hardening of the artery wall, with consequent loss of elasticity. (1)
3. Arteriosclerosis most commonly involves the blood vessels of the heart, brain, kidneys, aorta and legs. (1)
4. Since arteriosclerosis is seen more frequently in patients with a disordered metabolism of sugar (diabetes) and in disorders of fat metabolism than in those without, it is generally considered to be a metabolic disease, although actual injury to the blood vessel wall and other


CORONARY SHUTDOWN
CORONARY ARTERY
1. NORMAL
2. DISEASED
3. ADVANCED
4. BREAK
5. BLOCK
Blood flow
Intima (lining)
Media (muscle)
Adventitia (covering tissue)
Plaque of chalky, fatty material
Abscess contains blood-cell and other debris, fats, calcium.
Weak "dead" spot
Abscess contents mix with blood components.
Clot forms and causes coronary occlusion.
HEART
Right coronary artery
Left coronary artery
Clot
Closing of coronary branch starves part of heart muscle.

TIME Diagram by V. Puglisi

considerations probably also play a role in its causation. (1)

I. HOW DOES ARTERIOSCLEROSIS AFFECT THE HEART?

1. Uncomplicated arteriosclerosis produces a gradual reduction in effective blood flow which, in the arteries supplying the heart, may manifest itself as "angina pectoris." This condition is characterized by pain in the chest which is often brought on by exertion. (1)
2. If the restriction in blood flow by arteriosclerosis is rapid or drastic enough, extensive damage of heart muscle may occur (myocardial infarction). This more dramatic event usually called a "heart attack" is caused by complications of the disease process; i.e., hemorrhage arising within the artery wall, or the formation of a blood clot (coronary thrombosis) upon the lining surface. Either complication may further restrict the caliber of the vessel or completely block it. (1)

II. HOW DOES ARTERIOSCLEROSIS AFFECT THE BRAIN?

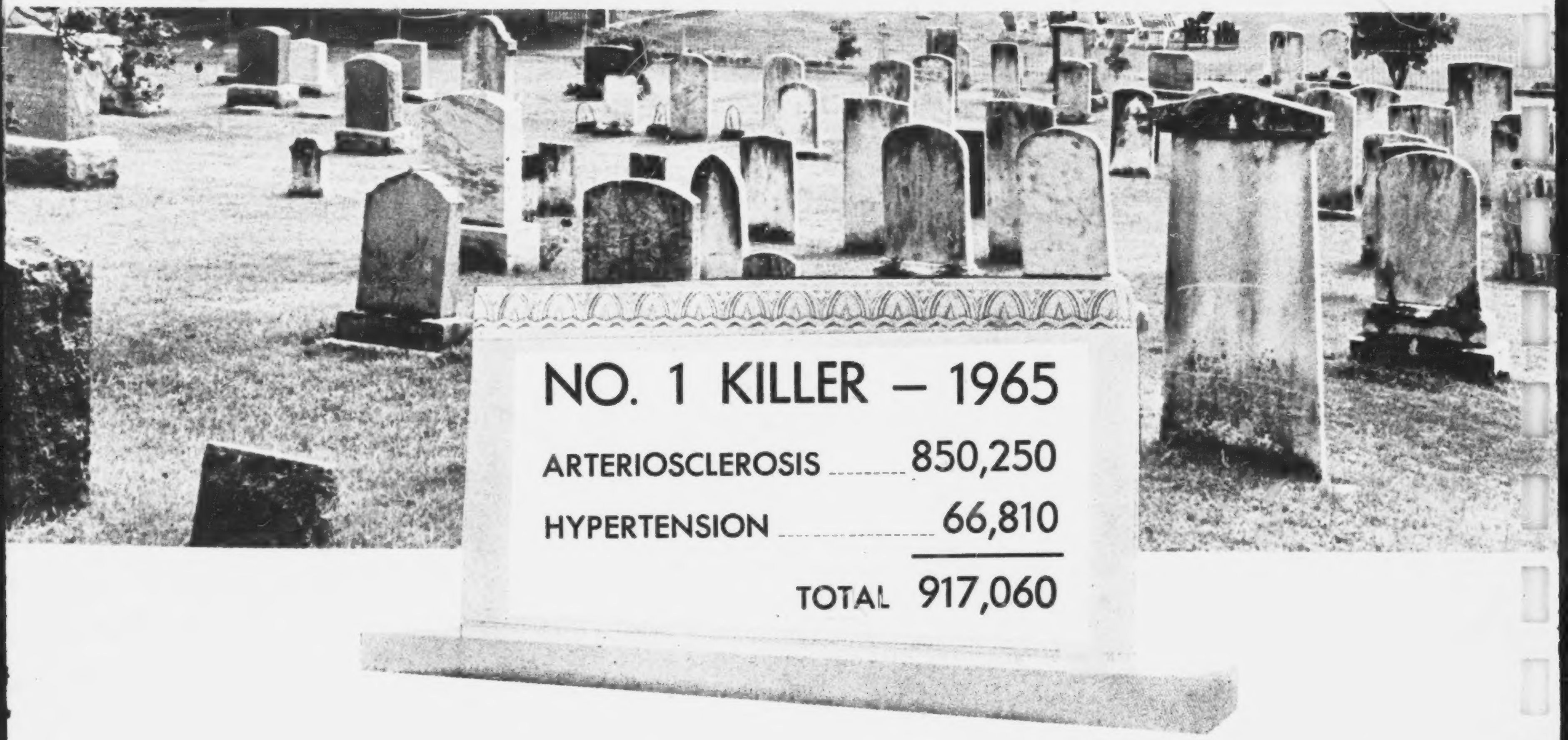
1. Impairment of blood supply to the brain caused by arteriosclerosis may similarly cause gradual or sudden and dramatic damage, in the latter instance the familiar "stroke". (1)

III. HOW DOES ARTERIOSCLEROSIS AFFECT THE KIDNEYS?

1. Arteriosclerosis by affecting the kidneys may cause one type of hyper-

tension. Hypertension in turn may accelerate the development of all types of arteriosclerosis located in any part of the body. (1)

2. Although hypertension and arteriosclerosis frequently occur together they are separate entities, but either usually intensifies the other. (1)



V. HOW MANY PEOPLE DIE FROM ARTERIOSCLEROSIS?

1. 850,250 Americans died from arteriosclerosis alone in 1965 — 85% of all cardiovascular-renal disease deaths and over 47% of all deaths from all causes in the United States that year. (2)

a. Arteriosclerosis deaths

Arteriosclerotic heart disease	556,500	
"Strokes" - vascular lesions affecting the central nervous system (cerebral thrombosis, embolism, hemorrhage)	203,330	
Nonrheumatic chronic endocarditis & other myocardial degeneration	52,770	
General arteriosclerosis	37,650	
		850,250

b. Hypertension deaths

Hypertensive heart disease	54,790	
Other hypertensive disease	12,020	66,810
Total Arteriosclerosis & Hypertension deaths		917,060

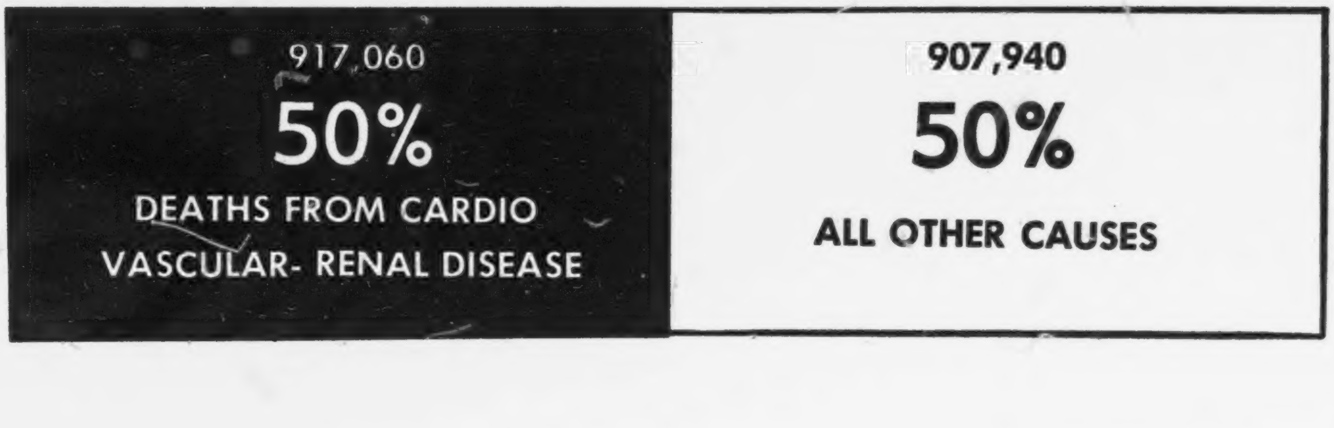
c. Deaths from other cardiovascular-renal diseases

Rheumatic fever and chronic rheumatic heart disease	16,140	
Other diseases of the heart	28,810	
Other diseases of circulatory system	27,120	
Chronic & unspecified nephritis & other renal sclerosis	10,720	
		82,790
Total estimated deaths from cardiovascular-renal diseases, 1965		999,850
Total estimated deaths from all causes, 1965		1,825,000

2. 50% OF ALL DEATHS IN 1965 were CAUSED BY ARTERIOSCLEROSIS & HYPERTENSION. (2)

1965 ESTIMATED DEATHS

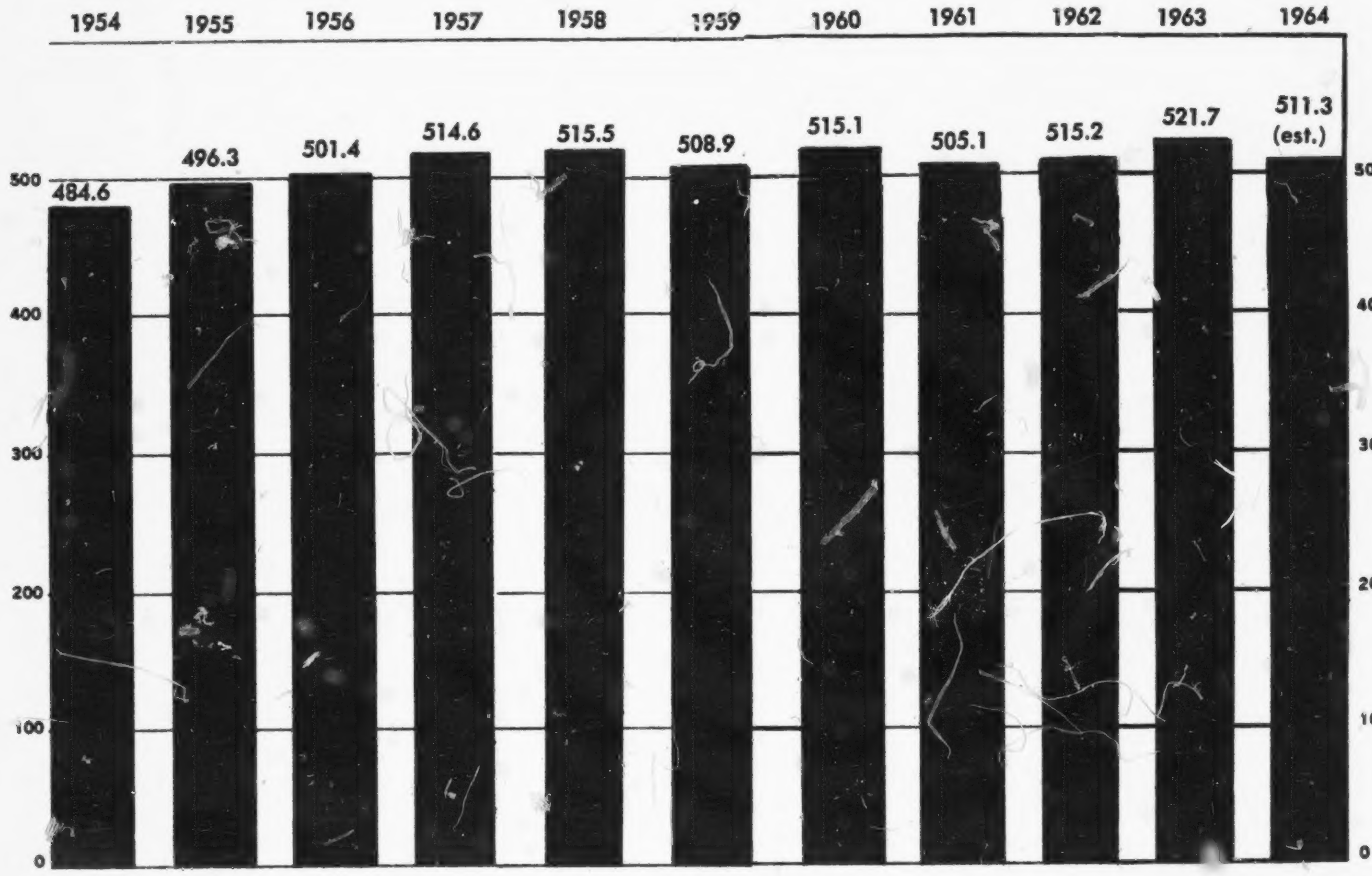
1,825,000



3. The following chart illustrates the steady toll of deaths taken by diseases of the heart and circulation, of which arteriosclerosis is the main cause, during the past 11 years: (2)

CRUDE DEATH RATES* FROM DISEASES OF THE HEART AND CIRCULATION

1954 - 1964



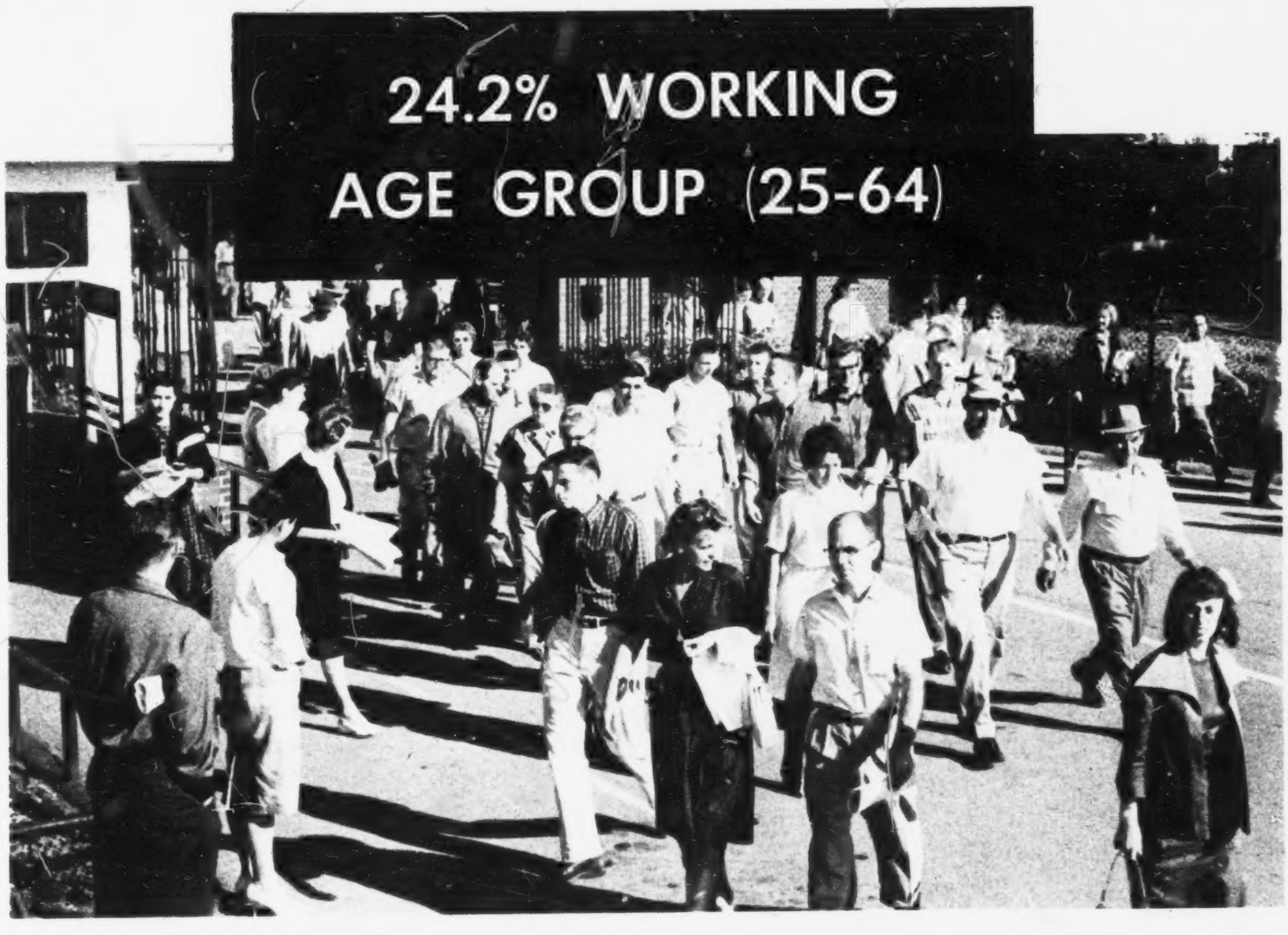
*Per 100,000 population residing in U. S.

4. Figures of the Heart Disease Epidemiology Study in Framingham, Massachusetts, indicate that about 50% of persons who died of initial heart attacks did so within minutes of onset. Nearly 20% of initial heart attacks in men resulted in death within one hour of the attack; 80% had no hint of the impending disaster.

Unrecognized "silent" heart attacks were neither rare nor inocuous. One in 3 women and one in 4 men had heart attacks which were unrecognized. Within 5 years one in 3 recurred and half of these were fatal. (27)

VI. IN WHAT AGE GROUPS DO ARTERIOSCLEROSIS & HYPERTENSION TAKE THE GREATEST TOLL?

1. 24.2% — 221,139 of the 915,177 deaths in 1963 from these causes — were in the "working age" groups from 25 to 64 years of age. (2)
2. 75.6% of these deaths (692,298) were over 65 years of age; only 1,789, less than 1% occurred in the age groups under 25. (2)
3. 198,275 of these deaths were in the age groups 45 to 64 years of age. (2)



VII. WHAT DOES THIS LOSS IN THE WORKING AGE GROUP MEAN TO OUR NATIONAL ECONOMY?

1. If these 221,139 people who died between 25 and 64 years of age had been able to live an extra, healthy year, they could have earned in that one year alone $1.5 billion dollars ($1,459,517,400.)
2. The Federal Government could have gained in one year approximately $202,121,046 in income tax revenue on these earnings. (3)

VIII. DO MORE MEN DIE FROM CARDIOVASCULAR-RENAL DISEASES THAN WOMEN? YES!

1. In 1963, the crude male death rate from cardiovascular-renal diseases was 28.4% higher than the crude female death rate from these diseases. (2)

a. In 1963, 123,135 more men died from arteriosclerotic heart disease than women. (334,974 male deaths from arteriosclerotic heart disease, 211,839 female deaths from the same cause). (2)

2. The male death rate from arteriosclerotic heart disease shows its greatest increase over the female death rate between the ages of 30 and 60 years. (2)

ARTERIOSCLEROTIC HEART DISEASE (including coronary disease)

AGE-SPECIFIC DEATH RATES BY SEX, 1963 (2)

Death Rate per 100,000 population

Age Group	Male	Female	% Male Death Rate Higher than Female Death Rate
All ages	361.6	220.9	64%
Under 1 year	0.3	0.2	50%
1-4 years	0.1	0.0*	—
5-9 years	0.1	-**	--
10-14 years	0.1	0.1	-
15-19 years	0.4	0.2	100%
20-24 years	1.4	0.6	133%
25-29 years	4.7	2.0	135%
30-34 years	17.3	4.8	260%
35-39 years	53.6	11.1	383%
40-44 years	126.0	25.8	388%
45-49 years	257.1	50.8	406%
50-54 years	449.4	104.4	330%
55-59 years	725.5	202.3	259%
60-64 years	1,099.2	399.8	175%
65-69 years	1,702.8	714.5	138%
70-74 years	2,322.2	1,218.5	91%
75-79 years	3,237.1	2,018.7	60%
80-84 years	4,729.1	3,458.1	37%
85 years & over	7,754.0	6,736.1	15%

*0.0 means "less than 0.05 per 100,000"
**- means a zero rate, i.e., no deaths

3. Among "stroke" deaths in 1963, 12,688 more women died than men. (106,927 females died from vascular lesions affecting the central nervous system in 1963 and 94,239 men from the same cause). (2)

VASCULAR LESIONS AFFECTING CENTRAL NERVOUS SYSTEM

AGE-SPECIFIC DEATH RATES BY SEX, 1963

Death Rate per 100,000 population

Age Group	Male	Female	% Male Or Female Death Rate Higher
All ages	101.7	111.5	9.6% F
Under 1 year	3.8	3.1	22.5% M
1-4 years	0.8	0.7	14% M
5-9 years	0.6	0.4	50% M
10-14 years	0.9	0.6	50% M
15-19 years	1.4	1.1	27% M
20-24 years	2.0	2.0	-
25-29 years	3.5	3.4	3% M
30-34 years	6.1	6.2	1.6% F
35-39 years	10.1	11.0	9% F
40-44 years	19.6	19.9	1.5% F
45-49 years	33.8	33.5	less than 1% M
50-54 years	66.1	54.4	21.5% M
55-59 years	119.3	87.1	37% M
60-64 years	207.6	155.2	34% M
65-69 years	387.0	288.4	34% M
70-74 years	668.4	532.4	26% M
75-79 years	1,180.1	1,021.1	15.5% M
80-84 years	2,038.9	1,948.8	46% M
85 years & over	3,724.2	3,886.4	4% F

IX. HOW MANY PEOPLE ARE DISABLED BY ARTERIOSCLEROSIS?

1. No estimates are available at this time on the number of people who have arteriosclerosis, the main cause of heart attacks and strokes, although a recent report of the National Center for Health Statistics

estimates that of the 111.1 million adults in the U.S., an estimated 27.6 million had either definite or suspected heart disease: (4)

PREVALENCE OF DEFINITE & SUSPECT HEART DISEASE IN ADULTS, BY HEART DISEASE DIAGNOSIS: UNITED STATES, 1960-1962 (4)

Heart disease diagnosis	Definite heart disease	Suspect heart disease	Definite heart disease	Suspect heart disease
	No. of adults in thousands		Per cent of adults	
Total	14,621	12,979	13.2	11.7
Hypertensive	10,499	4,759	9.5	4.3
Coronary	3,125	2,410	2.8	2.2
Rheumatic	1,270	...	1.1	...
Congenital	244	...	0.2	...
Syphilitic	147	...	0.1	...
Other	292	7,330	0.3	6.6

NOTE: Counts for "Other" exclude persons with any of the specified heart diseases. Counts for the specified heart diseases, on the other hand, are not exclusive. The criteria do not provide for "possible" categories of rheumatic, congenital, or syphilitic heart disease.

X. WHAT IS THE COST OF HEART DISEASE & STROKES TO THE NATIONAL ECONOMY?

The economic costs of heart disease and strokes to the Nation in 1962 totaled at least $6.1 billion, according to the 1964 Report of the President's Commission on Heart Disease, Cancer and Stroke.

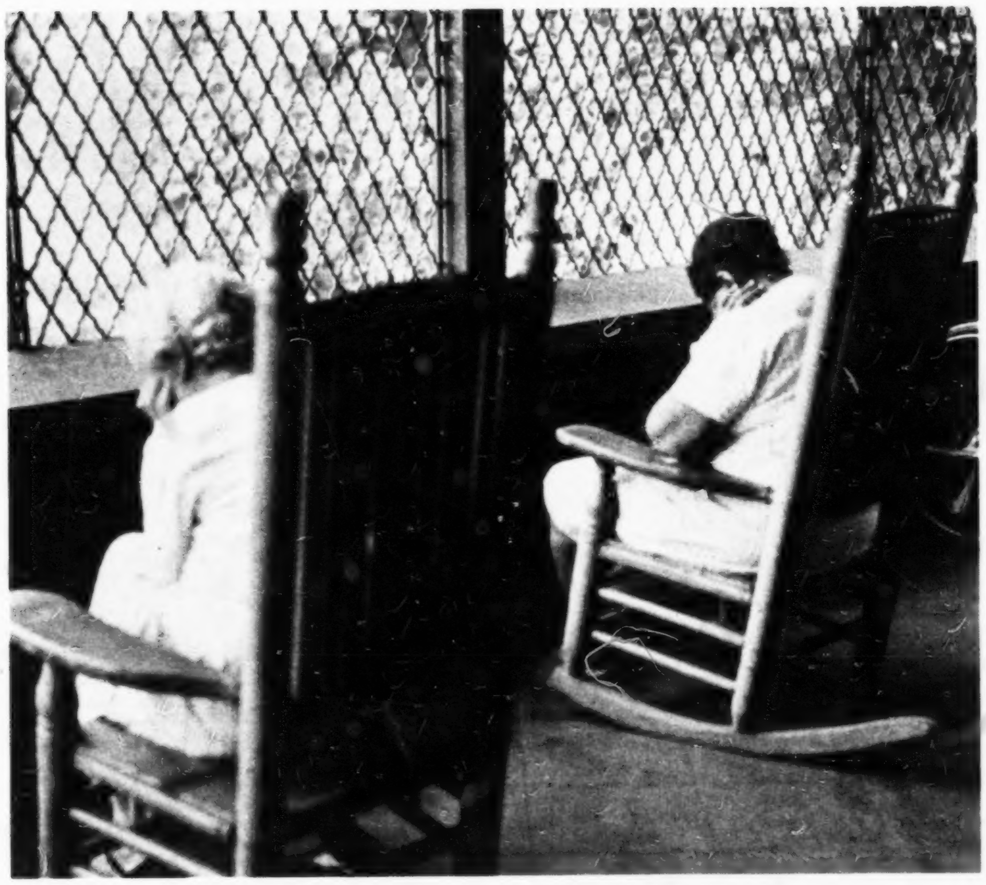
1. Direct expenditures for hospital and nursing home care, physicians' services, drugs and other medical services for persons with heart disease amounted to $2.6 billion in 1962.
2. Direct expenditures for services and supplies for diagnosis, treatment, and rehabilitation of stroke victims total $440 million per year

according to conservative estimates.

3. An estimated 132 million work-days are lost each year by members of the labor force, housewives, and others who are unable to attend to their usual activities because of heart disease. This is equivalent to a loss of 540,000 man-years, which amounts to $2.5 billion in terms of 1962 dollars.
4. The losses in output resulting from disability and premature deaths from strokes are equivalent to 179 million man-hours, or approximately $700 million in 1962 dollars.

XI. HOW MANY PEOPLE ARE VICTIMS OF STROKES DUE TO ARTERIOSCLEROSIS?

1. At least 2 million people are victims of cerebrovascular diseases ("strokes") — the result of arteriosclerosis and hypertension, or both. (7)
2. 62,301 patients were in public state and county mental hospitals in 1963 (latest year for which such information is available) with mental diseases due to cerebral arteriosclerosis, other circulatory disturbances, and senile brain disease. (8)
   (a) While these patients make up about 20% of first admissions to public mental hospitals, because of their high death rate, they constitute only about 13% of the resident population. (8)



XII. WHAT IS THE ESTIMATED COST OF CARE FOR CEREBRAL ARTERIOSCLEROSIS PATIENTS IN MENTAL HOSPITALS?

1. The estimated cost per year per patient under treatment in 1963 in public mental hospitals was $1,353. (9)
2. Thus, the total cost for caring for and maintaining the 62,301 patients in public mental hospitals with cerebral arteriosclerosis, other circulatory disturbances and senile brain disease in 1963 would total an estimated $84,293,253.

62,301 x $1,353 = $84,293,253

XIII. HOW MUCH IS BEING SPENT FOR RESEARCH IN ARTERIOSCLEROSIS?

1. An estimated $22,108,449 is currently being spent by the National

Heart Institute of the U.S. Public Health Service in fiscal 1965 specifically for research in arteriosclerosis. (10)

2. Other agencies, both public and private, are supporting cardiovascular research; however, it is impossible for them to determine how much is specifically being spent in the area of arteriosclerosis. (See chart following, page 15.)

XIV. HOW MUCH IS BEING SPENT FOR RESEARCH IN HYPERTENSION?

1. An estimated $6,140,253 is currently being spent by the National Heart Institute of the U.S. Public Health Service in fiscal 1965 specifically for research in hypertension. (10)
2. Other agencies, both public and private, are supporting cardiovascular research; however, it is impossible for them to determine how much is specifically being spent in the area of hypertension. (See chart following, page 15.)

XV. HOW MUCH IS BEING SPENT FOR RESEARCH IN CEREBROVASCULAR DISEASE ("STROKES")?

1. An estimated $4,597,577 is currently (fiscal 1965) being spent for research in cerebrovascular disease, as follows:

National Heart Institute, fiscal 1965 (10)	$1,790,577.
Nat'l Institute of Neurological Diseases and Blindness, fiscal 1965 (7)	2,807,000.
	$4,597,577.

2. Other agencies, both public and private, are supporting cardiovascular research; however, it is impossible for them to determine how much is specifically being spent in the area of cerebrovascular disease ("strokes"). (See chart following, page 15.)

XVI. HOW MUCH IS BEING SPENT FOR CARDIOVASCULAR DISEASE RESEARCH AS A WHOLE?

1. In total, $124,403,378 is currently being spent for research in all cardiovascular diseases. Of this total, it can be determined: (See chart following)

$22,108,449	is being spent for research in arteriosclerosis
$ 6,140,253	is being spent for research in hypertension
$ 4,597,577	is being spent for research in cerebrovascular disorders ("strokes")

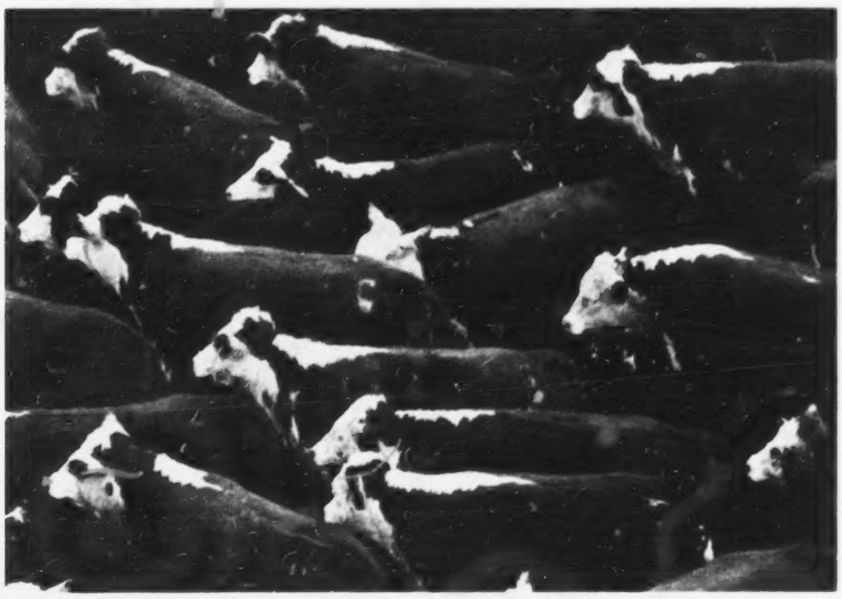
$32,846,279 - estimated amount currently being spent for research in arteriosclerosis, hypertension, and cerebrovascular disorders ("strokes") which cause over 50% of all deaths in the U.S. today.

2. In contrast to the total of $32,846,279 currently being spent from the major federal sources listed for research in arteriosclerosis, hypertension and cerebrovascular diseases, an estimated $219 million will be spent by the Agricultural Research Service of the U.S. Department of Agriculture in fiscal 1965. (13)

ESTIMATED RESEARCH EXPENDITURES BY VARIOUS AGENCIES LISTED BY TYPE OF CARDIOVASCULAR DISEASE:

Agency	Research in Arterio-sclerosis	Research in Hypertension	Research in Cerebrovascular Disorders ("Strokes")	Research in Other Cardio-vascular	Research in All Cardio-vascular Total
Major Public Funds					
National Heart Institute U.S. Public Health Service Fiscal 1965 (10)	$22,108,449	$6,140,253	$1,790,577	$76,900,721	$106,940,000
Nat'l Institute of Neurological Diseases & Blindness, U.S. Public Health Service, fiscal 1965 (7)			$2,807,000		2,807,000
	$22,108,449	$6,140,253	$4,597,577	$76,900,721	$109,747,000
Veterans Administration, fiscal 1965 (11)					$ 2,000,000
TOTAL FEDERAL FUNDS LISTED					$111,747,000
Major Private Funds					
American Heart Association & its affiliates 1963-64 (12)					10,580,280
Life Insurance Medical Research Fund, 1963-64 grants & fellowships (17)					1,399,364
Helen Hay Whitney Foundation, grants & fellowships for year ended June 30, 1964 (18)					676,734
TOTAL PRIVATE FUNDS LISTED					$ 12,656,378
				TOTAL	$124,403,378

HOW MUCH FOR THEM?



$219,000,000

AGRICULTURAL RESEARCH SERVICE
(U.S. Dept. of Agriculture)

HOW MUCH FOR US?

$32,846,279

ARTERIOSCLEROSIS, HYPERTENSION & CEREBROVASCULAR DISEASE RESEARCH
(major federal sources)
(see chart)

3. While it is costing over $84 million per year to care for the 62,301 patients in public mental hospitals alone with cerebral arteriosclerosis and mental diseases of old age, we are spending only $32.8 million from major government sources for research in arteriosclerosis, hypertension and cerebrovascular diseases.

   The problem of cerebrovascular disease is closely related to the problems of high blood pressure (hypertension) and of hardening of the arteries (arteriosclerosis). Any advance toward solving one of these problems is an advance toward solving the others.

4. Though the new drugs for hypertension have contributed to the declines in the death rates from hypertension, a basic solution to the problem of arteriosclerosis and its prevention must be found, as well as even better drugs for hypertension, and many leads are at hand.

XVII. WHAT ARE THE MAJOR RESEARCH PAY OFFS AND DEVELOPMENTS IN THE TREATMENT OF ARTERIOSCLEROSIS OF THE HEART (HEART ATTACK)?

1. The value of treating with anticoagulants the first four weeks after acute myocardial infarction (heart attack) is now established. Such therapy reduces the mortality rate approximately in half. (19)

   Recent large-scale, well-controlled studies have confirmed the finding that there is marked reduction in the recurrence rate, hospitalization and death rate of patients who have suffered from

RESULTS OF LONG-TERM* ANTI-COAGULANT TREATMENT

This tabulation shows the *decrease in deaths* among patients receiving anti-coagulant therapy as contrasted with patients not receiving anti-coagulants.

*-Long-term: One month to 3 years or longer.

Source: Reference (19).

		Treated		Controls (not receiving anti-coagulants)		% Deaths Among Controls Higher than Deaths Among Treated
Investigator	Series	Total Patients	% Deaths	Total Patients	% Deaths	
Suzman	1955	82	7.3	89	33.0	352%
Keyes	1956	121	9.9	234	48.0	385%
Bjerklund	1957	119	20.1	118	35.6	77%
Manchester	1957	204	7.8	200	42.5	445%
Nichol et al	1958	995	12.5	407	37.3	198%
Toohey	1958	117	1.7	327	11.3	565%
Brit. Med. Research Council	1959	195	11.0	188	17.0	55%
Ensor & Peters	1959	268	25.0	140	36.0	44%
De Smet et al	1960 I	99	31.0	98	52.0	68%
	1960 II	92	31.4	108	70.0	123%
Suzman	1961	779	22.0	1111	54.0	145%
Kuhn et al	1961	166	13.0	270	26.0	100%
Cloetens (total: 6 yrs.)	1963	175	30.0	89	50.0	67%

myocardial infarction if they are controlled on long-term anticoagulant therapy for at least two years. The findings suggest that this improvement may be maintained for as long as 4 years. (19) (20) (21) (22)

The weight of total evidence favors this decision. A recent study using a somewhat lower anticoagulant dosage concluded that if anticoagulants are administered for the first and subsequent attacks of myocardial infarction and for all thrombo-embolic complications which arise there may be no gain in keeping the patient on anticoagulants for life. There is fairly general agreement, however, that if the patient exhibits recurrent thrombo-embolic complications, anticoagulant therapy should probably be continued indefinitely unless contra-indications develop.

2. A female hormone preparation, Premarin, has been reported by two groups to reduce the death rate more than 50% and increase survival time following a heart attack in males. (23) (24) (26)
3. Another estrogen preparation has been reported to reduce the death rate in females following a heart attack. (25)
4. ATROMID-S is reported as a drug which reduces cholesterol without serious side effects and is easily tolerated. The question to be solved is: does it increase survival?

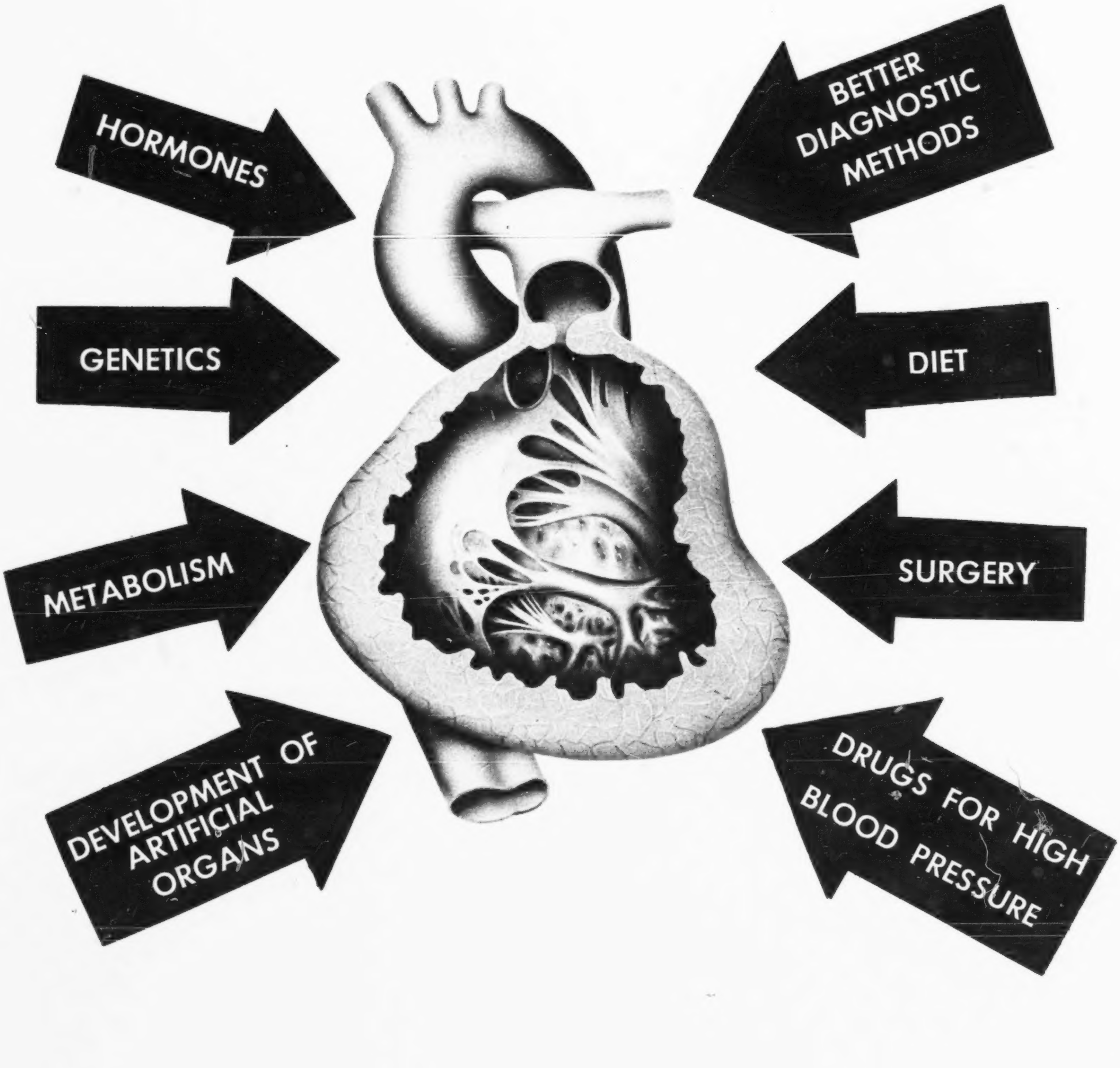
XVIII. WHAT HAS BEEN THE MEDICAL RESEARCH PAY-OFF IN HYPERTENSION?

As a result of the medical research breakthrough in the development of effective anti-hypertension drugs, the death rate from hypertensive heart disease has declined 49% between 1951 and 1965. (2)

XIX. WHAT HAS BEEN THE RESEARCH PAY-OFF IN RHEUMATIC HEART DISEASE?

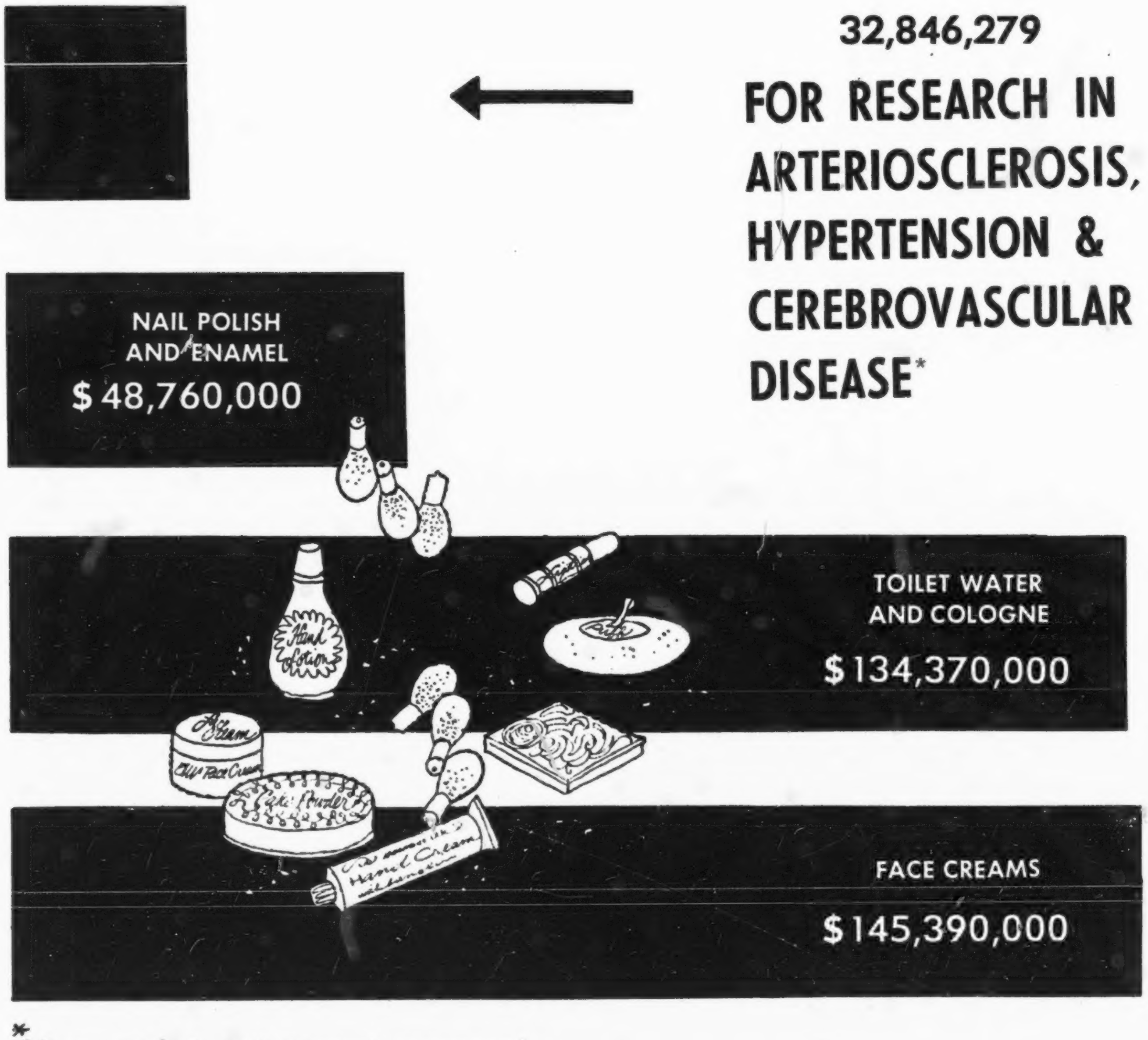
About 1/3 of the patients with rheumatic fever develop rheumatic heart disease. The medical research discovery of penicillin therapy as a cure for rheumatic fever has brought about a 90% decline in the death rate from acute rheumatic fever between 1944 and 1963 (2) and has reduced the incidence of rheumatic fever following hemolytic streptococcal infection almost to extinction. Recurrence of rheumatic fever among known rheumatic subjects, who are unusually susceptible, can be reduced to 2%. Without penicillin and such anti-microbial agents, the recurrence rate among rheumatic fever subjects following a hemolytic streptococcal infection has been as high as 50%. (16)

RESEARCH LEADS


HORMONES
GENETICS
METABOLISM
DEVELOPMENT OF ARTIFICIAL ORGANS
BETTER DIAGNOSTIC METHODS
DIET
SURGERY
DRUGS FOR HIGH BLOOD PRESSURE

XX. HOW MUCH DO THE PEOPLE OF THE UNITED STATES SPEND ON COMMERCIAL PRODUCTS FOR SELF-IMPROVEMENT IN CONTRAST TO WHAT IS CURRENTLY BEING SPENT FOR RESEARCH IN HEART ATTACKS AND STROKES DUE TO ARTERIOSCLEROSIS & HYPERTENSION IN ORDER TO PREVENT DISABILITY AND STAY ALIVE?

1. The people of the United States spent in 1964 approximately: (14)
   - (a) $145,390,000 for face creams;
   - (b) $134,370,000 for toilet water & cologne;
   - (c) $ 48,760,000 for nail polish & enamel.



*(from major government sources)

XXI. WHAT ARE THE NEEDS IN THE FIGHT AGAINST ARTERIOSCLEROSIS OF THE HEART, BRAIN AND VASCULAR SYSTEM?

1. More funds for research, training, community health services and education in the field of arteriosclerosis are urgently needed both in the United States and worldwide.

2. A simple method for the early detection and diagnosis of arteriosclerosis must be found, as well as better methods of treatment, cures and methods of prevention.

3. It is essential that the technical language presently in use in the field of arteriosclerosis and heart disease be simplified and the terminology made uniform and understandable to the lay public.

4. Large clinical trials of drugs which reduce cholesterol levels.

5. Fast methods of hormonal assays of normal males and females are needed to contrast with patients who have heart attacks, strokes or other arteriosclerotic episodes to determine deficiencies.

a. The majority of deaths occur after the hormonal protection of both males and females starts to diminish. Females seem to have greater protection until the menopause after which their death rates approach those of males in the same age groups. (See chart page 8)

It is assumed that this means that their greater output of estrogen is protecting them. However, precise methods of hormonal assay are needed for widespread use.

XXII. WHAT FACTORS PREDISPOSE ONE TO ARTERIOSCLEROSIS, HEART ATTACK AND/OR STROKE?

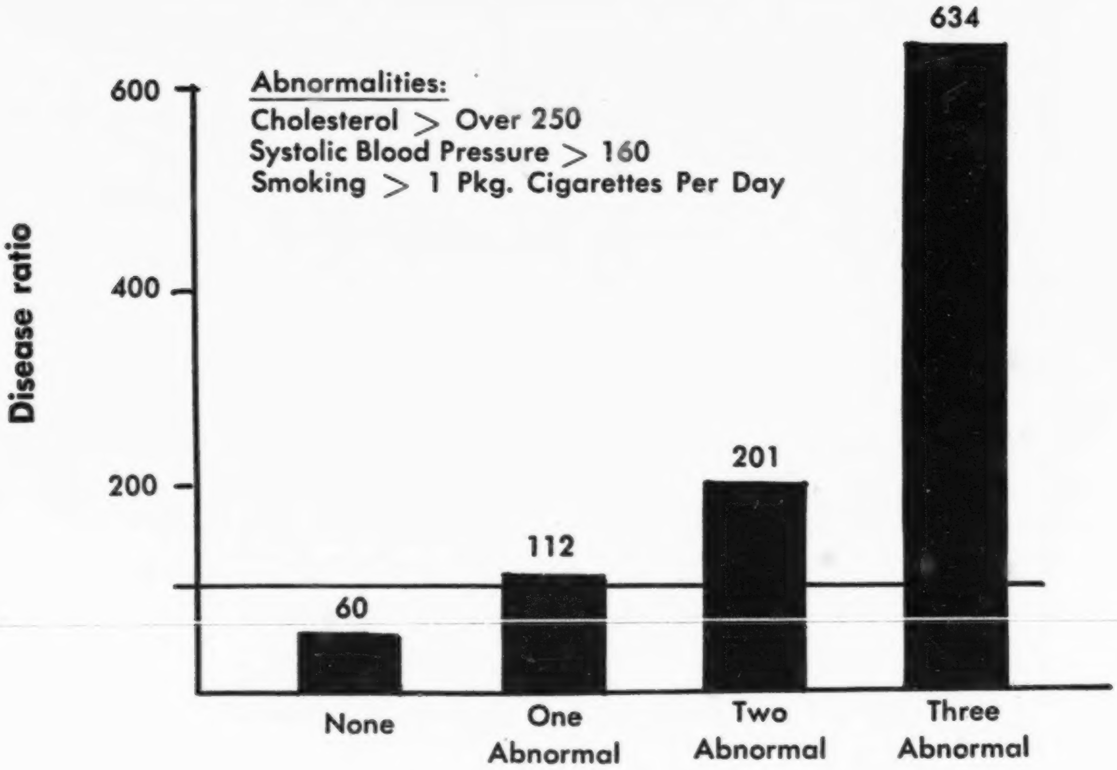
1. Eight leading U.S. physicians and 106 members of the American Society for the Study of Arteriosclerosis concurred on a statement designed to help people avoid heart attacks and strokes due to arteriosclerosis. (15)
2. The statement says, "Factors which predispose YOU to arteriosclerosis, heart attack, and stroke are:

   (a) Overweight
   (b) Elevated blood cholesterol level
   (c) Elevated blood pressure
   (d) Excessive cigarette smoking
   (e) Heredity

   "You can't change your heredity but you can influence the other factors and hence lessen your chances of being a victim of cardiovascular disease. If there is a history of cardiovascular trouble in your family, it just means you should be especially careful about factors you can control. On the key factors of overweight, cholesterol count, blood pressure and cigarette smoking, you should without fail consult your physician.

   "Any definitive statement about arteriosclerosis and its principal manifestations — coronary thrombosis (heart attack) and cerebral thrombosis (stroke) — will be modified as future research indicates.

Combinations of high risk Factors Increase the risk



Based on present knowledge, your careful attention to the points mentioned above is a sensible way to lessen your chances of becoming a victim of these killers." (15) See Appendix I for supporting data.

REFERENCE LIST

(1) Personal communication from Paul D. White, M.D., Howard B. Sprague, M.D., and Fredrick J. Stare, M.D., Boston, Massachusetts.

(2) Division of Vital Statistics, Nat'l Center for Health Statistics, Public Health Service, Washington, D.C.

(3) If the 221,139 people in the working age groups 25-64 years of age had been able to work and earn the 1964 median family income of $6,600 (Current Population Reports, Series P-60, No. 44, May 27, 1965. Consumer Income. Bureau of the Census, U.S. Dept. of Commerce, Washington, D.C.) for just one year, their total earnings in that one year would have amounted to approximately $1,459,517,400. If each claimed on the average 2 exemptions, they would each pay $914 in Federal income taxes on this median income of $6600, totaling in all about $202,121,046.

(4) National Center for Health Statistics. "Heart Diseases in Adults - U.S. - 1960-1962." Series 11, No. 6, PHS., Washington, D.C.

(5) "A National Program to Conquer Heart Disease, Cancer and Stroke" Report of the President's Commission on Heart Disease, Cancer and Stroke, Volume 1, December 1964.

(6) Report of the President's Commission on Heart Disease, Cancer and Stroke, December, 1964, Volume 1.

(7) Information Office, National Institute Neurological Diseases and Blindness, Bethesda, Maryland, 20014.

(8) Patients in Mental Institutions 1963, Public Health Service Publication No. 1222, Part II, Washington, D.C., 1964.

(9) Mental Health Statistics, Current Reports, January 1965, Nat'l Institute of Mental Health, Bethesda, Maryland, 20014.

(10) Lealon E. Martin, Chief, Heart Information Center, National Heart Institute, Bethesda, Maryland, August 13, 1965.

(11) Edward Dunner, M.D., Director, Research Service, Dept. of Medicine & Surgery, Veterans Administration, Washington, D.C.

(12) American Heart Association, Inc., New York, N.Y.

(13) Budget of the United States Government - 1966.

(14) From a survey compiled and published annually by "Drug Topics", Topics Publishing Company, New York, N.Y.

(15) A Statement on Arteriosclerosis: Main Cause of "Heart Attacks: and "Strokes", by Paul Dudley White, M.D.; Howard B. Sprague, M.D.; Jeremiah Stamler, M.D.; Fredrick J. Stare, M.D.; Irving S. Wright, M.D.; Louis N. Katz, M.D.; Samuel L. Levine, M.D.; Irvine H. Page, M.D. Supported by 106 members of the American Society for the Study of Arteriosclerosis. Published by the Nat'l Health Education Committee, Inc. as a public service, 1959-1960.

(16) Research Activities in Rheumatic Diseases, Joseph J. Bunim, M.D., (deceased), Public Health Reports, Vol. 69, No. 5, May 1954.

(17) Life Insurance Medical Research Fund, 19th Annual Report, 1963-64.

(18) Helen Hay Whitney Foundation - Sixth Report, July 1, 1961-June 30, 1964.

(19) Irving S. Wright, M.D., and associates, Cornell University Medical College, New York.

(20) An Assessment of Long-Term Anticoagulant Administration after Cardiac Infarction - Second Report of the Working Party on Anticoagulant Therapy in Coronary Thrombosis to the Medical Research Council of Great Britain. Brit. Med. J., 2, 837. 1964.

(21) Long-Term Anticoagulant Therapy After Myocardial Infarction — Report of the Veterans Administration Study. JAMA 193, 11, p. 929. September 13, 1965.

(22) Report by Dr. A. E. Loeliger of a long term study on the use of anticoagulants in the treatment of myocardial infarction conducted under the Red Cross Program in Leiden, Holland. Reported for the International Conference on Haemostasis and Thrombosis in Basel, August 29, 1965.

(23) "Clinical Studies of Long-Term Estrogen Therapy in Men with Myocardial Infarction" by Jessie Marmorston, M.D., Frederick J. Moore, M.D., Carl E. Hopkins, M.D., Oliver T. Kuzma, M.D., and John Weiner, M.S., Departments of Medicine and Public Health, Univ. of Southern California School of Medicine, Los Angeles County Hospital, and Cedars of Lebanon Hospital, Los Angeles. Proceedings of the Society for Experimental Biology and Medicine, Volume 110, No. 2, June 1962.

(24) "Effectiveness of Estrogens for Therapy of Myocardial Infarction in Middle-Age Men" by Jeremiah Stamler, M.D., Ruth Pick, M.D., Louis N. Katz, M.D., Alfred Pick, M.D., Benjamin M. Kaplan, M.D., David M. Berkson, M.D., and Dolores Century, B.S., Chicago, Journal of the American Medical Association, Vol. 183, No. 8, February 23, 1963.

(25) "Estrogen Prophylaxis in Women with Myocardial Infarction: A Comparison of 51 Estrogen-Treated Patients with 51 Matched Controls." A report delivered by Jessie Marmorston, M.D., October 1959, before the American Public Health Association, Atlantic City, New Jersey.

(26) Roundtable Discussion on the Role of Estrogens in Atherosclerosis Chairman, Dr. L.N. Katz; Panel members: Drs. Robert Furman, Jessie Marmorston, Ruth Pick, Roger Robinson, Videotaped October 12, 1961, Excerpta Medica Foundation, New York City.

(27) Personal communication from William B. Kannel, M.D., Director, Heart Disease Epidemiology Study, Framingham, Massachusetts, March 14, 1966.

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APPENDIX I
SUPPORTING DATA

In support of the first contributing factor, overweight, the following documentation is offered:

(a) Overweight and susceptibility to arteriosclerosis

> "Pathological as well as actuarial studies have shown significant differences in coronary disease in overweights as compared to underweights . . A succession of medico-actuarial studies representing experiences of individual insurance organizations and pooled intercompany data has uniformly shown that overweight is associated with a shortened life expectancy and increased mortality from several diseases, notably cardiovascular disorders and particularly in men."
>
> R. S. Gubner, Fatness, Fat and Coronary Heart Disease, Nutrition Reviews 15:353 (December) 1957.
>
> "The correlation between obesity and serum lipoprotein levels coupled with this demonstration that weight reduction will often lower these serum lipoproteins suggests that in our present state of knowledge the prevention and correction of obesity is the most plausible treatment of atherosclerosis."
>
> W. J. Walker, E. Y. Lawry, D. E. Love, G. V. Mann, S. A. Levine, and F. J. Stare, Effect of Weight Reduction and Caloric Balance on Serum Lipoprotein and Cholesterol Levels. Am. J. Med. 14:654-664 (June) 1953.
>
> "The harmful influence of obesity on the normal and on the diseased heart is well established. Persons with heart disease or hypertension who are obese have a much higher mortality rate than those who are of average weight or below . . . The reports in the literature and our own observations, however, clearly indicate the importance of avoiding obesity in cardiovascular disease."
>
> A. M. Master, H. L. Jaffee and K. Chesky, Relationship of Obesity to Coronary Disease and Hypertension. J. Am. Med. Assn. 153:1499-1501, 1953.
>
> "All of them (life insurance studies) have shown consistently that overweights have a mortality significantly higher than persons of lesser weight, and that this excess mortality is primarily due to cardiovascular diseases . . . Even more significant are the findings in a supplementary study of this experience. We were able to identify those persons who because of reduction in weight were subsequently granted insurance at standard rates . . . The mortality among such persons was appreciably

lowered - about one fifth among the males and one third among the females. A prime contributing factor was the reduction in the relative mortality from heart disease."

W. P. Shepard and H. H. Marks, Life Insurance Looks at the Arteriosclerosis Problem, Minnesota Med., 38:736-742, 1955.

". . . it was estimated that the risk of myocardial infarction is increased by about 50% by overweight and about 70% by hypertension. The relative risk of myocardial infarction among persons both overweight and hypertensive was estimated to be three and one-half times that among persons with neither of these conditions." (90,000 subjects of whom 207 developed myocardial infarction during the year of the study.)

S. Pell and C. A. D'Alonzo, Myocardial Infarction in a One-Year Industrial Study, J.A.M.A. 166:332-337 (1958).

In support of the second contributing factor, elevated blood cholesterol, the following documentation is offered:

(b) Elevated blood cholesterol level and susceptibility to arteriosclerosis

"The 273 men with established myocardial infarction were found to have both serum cholesterol and lipoprotein levels which were higher, on the average, than those in age-matched men without obvious disease (approximately 2,000 men). This finding supports the belief that clinical manifestations of atherosclerosis are associated with a disorder of lipid metabolism."

E. Y. Lawry, G. V. Mann, A. Peterson, A. P. Wysocki, R. O'Connell and F. J. Stare, Cholesterol and Beta Lipoproteins in the Serums of Americans. Well Persons and Those with Coronary Heart Disease. Am. J. Med. 22:605-623 (April) 1957.

"These molecules (cholesterol-bearing lipid and lipoprotein) are present with much higher frequency and at higher concentrations in patients who have survived a myocardial infarction than in corresponding individuals without known vascular disease."

J. A. Gofman, H. B. Jones, B. S. Lindgren, T. P. Lyon, H. A. Elliott, and B. Strisower, Blood Lipids and Human Atherosclerosis. Circulation 2:161-178, 1950.

"These results show that the concentration of cholesterol . . . is increased in a group of men with coronary sclerosis when contrasted with a group of normal men of comparable age."

M. F. Oliver and G. S. Boyd, Serum Lipoprotein Patterns in Coronary Sclerosis and Associated Conditions. Brit. Heart J. 17:299-302, 1955.

"Hypercholesterolemia was strongly associated with the development of new arteriosclerotic heart disease in men 45-62."

T. R. Dawber, F. E. Moore, and G. V. Mann, Coronary Heart Disease in the Framingham Study, Am. J. Public Health 47, No. 4 (Part 2): 4-24 (April) 1957.

"The incidence and severity of aortic atherosclerosis was studied in 941 aortas obtained from autopsies performed on low-income Costa Ricans, Guatemalans, and New Orleans whites . . . There is an apparent correlation between the dietary fat intake, the serum cholesterol levels, Sf 0-12 lipoprotein patterns, and the degree of aortic atherosclerotic lesions as measured by these methods."

C. Tejada, I. Gore, J. P. Strong and H. C. McGill, Jr., Comparative Severity of Atherosclerosis in Costa Rica, Guatemala, and New Orleans, Circulation 18:92-97 (July 1958).

In support of the third contributing factor, elevated blood pressure, the following documentation is offered:

(c) Elevated blood pressure and susceptibility to arteriosclerosis

"These complications (atherosclerosis) are two to three times more common in patients whose resting diastolic pressures average 110 mm. Hg or more than in patients with good responses (diastolic average less than 110 mm. Hg) . . . and the prevention of atherosclerotic complications is best accomplished by prompt, effective, and persistent control of hypertensive disease."

A. C. Corcoran, I. H. Page, H. P. Dustan, and L. A. Lewis, Atherosclerotic Complications of Hypertensive Disease: Relation to Therapeutic Response and to Serum Protein and to Lipoprotein Concentration. Preliminary Report. Cleveland Clinic Quart. 23:115-123, 1956.

"In the Framingham Study . . . it was found that among men age 45-62 elevation of blood pressure was associated with the development of coronary heart disease. Similarly fatness was associated, although much of this association could be explained by a high correlation between fatness and hypertension. Hypercholesterolemia was also associated with the development of new coronary heart disease in men of this age. Combinations of these three factors produced groups of men with still higher risks of development of coronary heart disease."

T. R. Dawber and W. B. Kannel, An Epidemiologic Study of Heart Disease. Nutrition Reviews, 16:1 (January) 1958.

"There are data from studies in both man and experimental animals which indicate that increased intravascular pressure tends to promote the development of atheromata."

World Health Organization Technical Report Series No. 117. Study Group on Atherosclerosis and Ischaemic Heart Disease Report. World Health Organization. Palais des Nations. Geneva, 1957.

See last quote under overweight.

Pell, S. and C. A. D'Alonzo, Myocardial Infarction in a One-Year Industrial Study, J.A.M.A. 166:332-337, 1958.

In support of the fourth contributing factor, excessive cigarette smoking, the following documentation is offered:

(d) Excessive cigarette smoking and susceptibility to arteriosclerosis

"On the basis of scientific and experimental investigations, it is apparent that the smoking of tobacco is most likely a contributory factor . . . in the production of cardiovascular disease."

G. M. Roth, Tobacco and the Cardiovascular System: the Effects of Smoking and of Nicotine on Normal Persons. Springfield: Charles C. Thomas, 1951.

"It was found that men with a history of regular cigarette smoking have a considerably higher death rate than men who have never smoked or men who have smoked only cigars or pipes . . . Disease of the coronary arteries was indicated as the primary cause of death . . ."

E. C. Hammond and D. Horn, The Relationship Between Human Smoking Habits and Death Rates. J. Am. Med. Assn. 155:1316-1328, 1954.

E. C. Hammond and D. Horn, Smoking and Death Rates — Report of Forty-Four Months of Follow-Up of 187,783 Men. J. Am. Med. Assn. 166:1159, 1958.

"If the causes of death as certified are accepted at their face value, mortality from coronary thrombosis reveals a .... significant relationship with smoking."

R. Doll and A. B. Hill, Lung Cancer and Other Causes of Death in Relation to Smoking. Brit. Med. J. 2:1071-1081 (Nov. 10) 1956.

"Two independent large-scale studies on the role of tobacco in cancer of the lung state as an incidental finding that heavy smokers have higher death rates from coronary thrombosis."

World Health Organization Technical Report Series No. 117. Study Group on Atherosclerosis and Ischaemic Heart Disease Report. World Health Organization, Palais des Nations, Geneva, 1957.

"At least three statistical investigations show an association of tobacco smoking with a decrease in longevity, probably referable to a higher risk, for male smokers, of dying from cardiovascular disease. The mortality among smokers in certain age groups is reported to be approximately double that of non-smokers. . . . Cardiovascular diseases account for well over half of all male adult deaths. Even a relatively small proportional excess in the cardiovascular death rate could, therefore, contribute a larger number of deaths than a much larger excess in the lung cancer death rate."

Smoking and Health. Joint Report of the Study Group on Smoking and Health. Science 125:1129, 1957.

"Up to the age of 65 the coronary artery disease mortality rate in longshoremen who reported smoking a pack or more a day was roughly twice the rate in longshoremen who smoked fewer cigarettes or none at all." (3994 longshoremen)

L. Breslow and R. Buechley, Factors in Coronary Artery Disease, Cigarette Smoking and Exercise, Calif. Med. 89:175-178 (Sept. 1958).

In support of the fifth contributing factor, heredity, the following documentation is offered:

(e) Heredity and susceptibility to arteriosclerosis

"Now let us turn to the most serious problem of all — namely that of coronary atherosclerosis of a degree great enough to cause trouble.

Here, we practitioners know from experience the importance of heredity."

P. D. White, Genes, The Heart and Destiny. New Engl. J. Med. 256:965-969 (May 23) 1957.

"Coronary artery disease was nearly four times as prevalent among siblings of individuals with coronary artery disease as among siblings of persons without it."

C. B. Thomas and H. B. Cohen, Familial Occurrence of Hypertension and Coronary Artery Disease, with Observations Concerning Obesity and Diabetes. Ann. Int. Med. 42:90-127, 1955.

"The life insurance companies in the United States investigated 18,000 insured lives for periods of up to 15 years and showed conclusively that persons who had reported two or more cases of early cardiovascular renal disease in their families were subject to death rates from cardiovascular disease that were from 1-3/4 to 2-1/2 times those prevailing among all persons insured at standard premium rates."

Impairment Study, 1951, Society of Actuaries (April) 1954. (Discussed by I. H. Page, F. J. Stare, A. C. Corcoran, H. Pollack, and C. F. Wilkinson, Jr.: Atherosclerosis and the Fat Content of the Diet. Circulation 26:163-178 (August) 1957.)

"When these observations are taken together – the facts that the disease appears to be familial, that it is associated with a shortened life span . . . it is reasonable to suspect the existence of hereditary genetic factors in the etiology of coronary heart disease . . . On the basis of the evidence concerning the proportion of deaths and the causes of death in the parents of both groups (i.e. patients with heart disease and matched controls without disease) it is reasonable to conclude that coronary heart disease is more likely to occur in families or individuals if mother, father, or siblings have experienced the disease."

M. M. Gertler, P. D. White, and others, Coronary Heart Disease in Young Adults: A Multidisciplinary Study. Cambridge: Harvard University Press, 1954.

"Probably all would agree that some genetic influence is involved in the pathogenesis of . . . atherosclerosis, including coronary artery disease."

V. A. McKusick, Genetics in Relation to Cardiovascular Disease, Eugenics Quarterly 5:30, 1958.

Regarding the statement: "Hard work itself is often wrongly blamed for this disease," the following documentation is offered:

Hard work and lack of evidence associating it with arteriosclerosis.

"Work does not produce heart disease."

Statement agreed to by 93% of 398 medical specialists in a report of the 6th Moreland Commission to the Governor, State of New York, January 1957.

"Men in physically active jobs have a lower incidence of coronary heart disease in middle age than have men in physically inactive jobs. More important, the disease is not so severe in physically active workers."

J. N. Morris, J. A. Heady, C. A. B. Raffle, C. G. Robers, J. W. Parks: Coronary Heart Disease and Physical Activity of Work. The Lancet II: 1111 (Nov. 28) 1953.

Tables 1, 2 and 3 show that mortality rates from coronary disease are less (two to three times) among individuals with heavy physical activity than among individuals with light physical activity.

S. C. Morrison, Occupational Mortality in Scotland. Brit. J. Indust. Med. 14, 130, 1957.

". . . it has been suggested that the apparent rise in some countries in the frequency of ischaemic heart disease among young and middle-aged men may be related to this reduction in the average level of physical activity."

"The widespread belief that psychological factors (stress, strain, and mental tension) play some part in the genesis of ischaemic heart disease appears to have as yet no scientific basis."

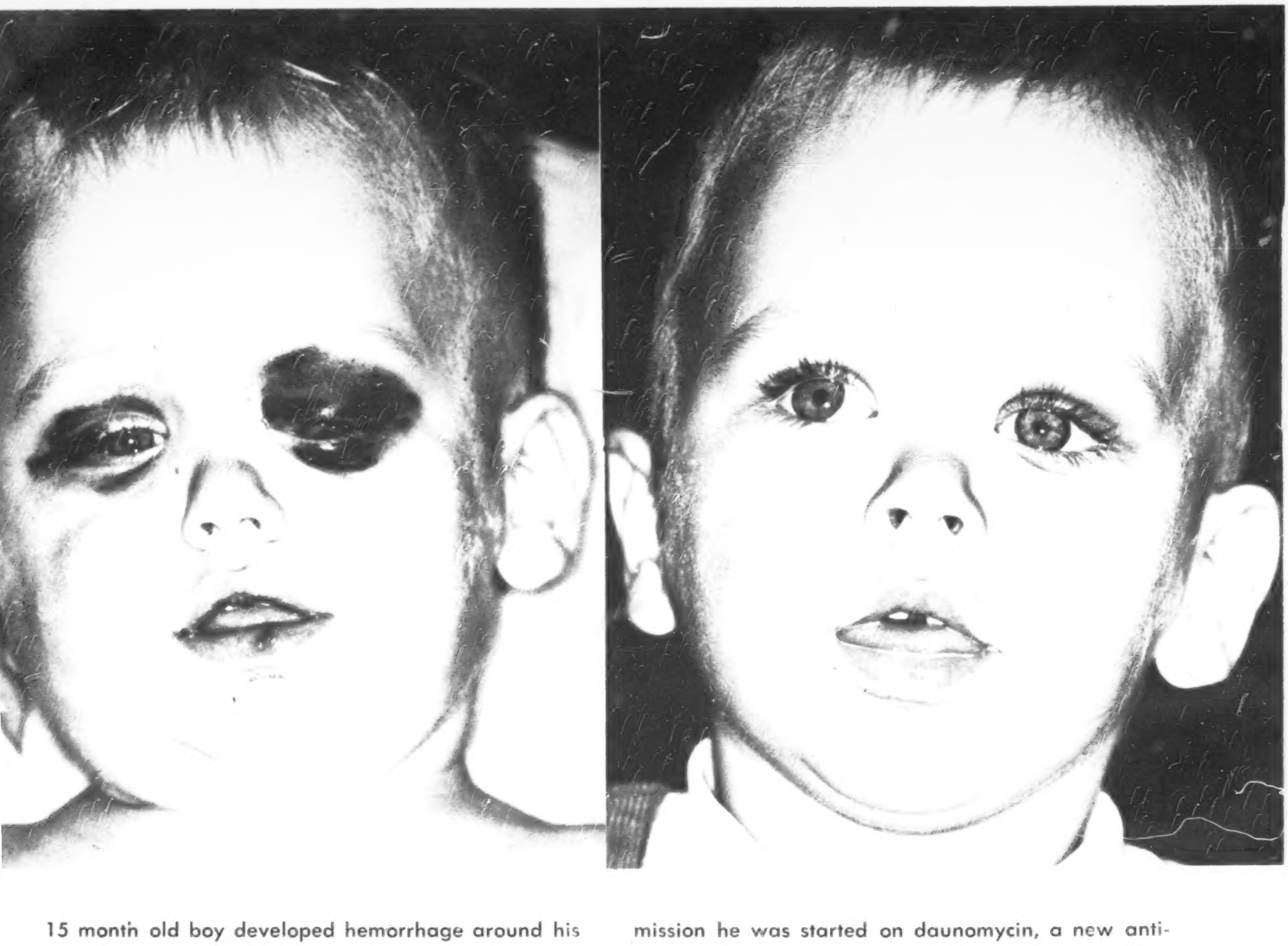
World Health Organization Technical Report Series No. 117. Study Group on Atherosclerosis and Ischaemic Heart Disease Report. World Health Organization, Palais des Nations, Geneva, 1957.

"In 89 men aged 60-69 in whom a confirmed diagnosis of coronary artery disease was made, the prevalence seemed to be unrelated to the mental demands of the men's occupations. It was fairly closely related to the physical demands of occupation, being highest for men in sedentary work. This was most evident in professional and related occupations."

R. G. Brown, L. A. G. Davidson, T. McKeown, and A. G. W. Whitefield, The Lancet II:1073 (Nov. 30) 1957.

WHAT ARE THE FACTS ABOUT

CANCER?



15 month old boy developed hemorrhage around his eyes following a mild fall in July 1965. A few days later he had a high fever, then began to lose his appetite and was very irritable. The swelling around his eyes continued to get worse and in August his left eye was protruding with more hemorrage around it. Seen by doctor who felt a mass in his abdomen. He was referred to Memorial Hospital on September 1, 1965. The diagnosis of neuroblastoma was confirmed, already wide-spread, involving the head, eyes and multiple bones. There was a mass in the abdomen with many enlarged lymph nodes. Tumor cells were present in his bone marrow. Two days after admission he was started on daunomycin, a new antibiotic, effective in certain children with neuroblastoma. Five days after his first course of treatment, a definite improvement in the protrusion of the eye and a decrease in the hemorrhage around it. He improved and by the end of the month went home. Improvement lasted for about a month when the disease recurred. In November, he received his second course of daunomycin, it did not help him. Treatment was changed to other chemotherapeutic agents — prednisone, cytoxan and vincristine — he improved and was able to go home for Christmas.

WHAT ARE THE FACTS ABOUT CANCER?

WHAT ARE WE DOING ABOUT CANCER?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

I. HOW MANY PEOPLE DIE OF CANCER IN THE UNITED STATES?

1. The Number Two Killer of our people is cancer. (1)

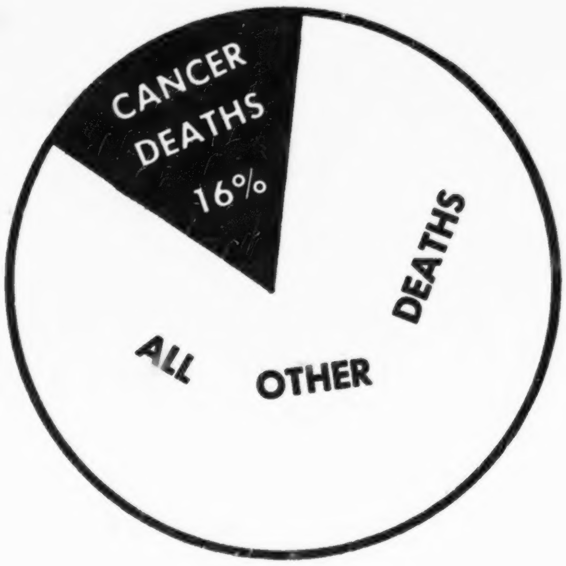
2. 296,320 Americans died of cancer in 1965 (1), or about one out of every six deaths.

   a. This means that cancer killed 16% of the 1,825,000 Americans who died in 1965. (1)

   b. Cancer killed 37 times as many people in the United States in 1965 as did tuberculosis. (1)

3. It is estimated that 49,000,000 people now alive in this country will eventually have cancer unless preventive measures are found. (2)

4. Unless new treatments and cures are found 1 person in every six will die from cancer.



5. Cancer kills one man, woman or child every two minutes in the United States.

6. Cancer killed in 1965 alone over 12 times the number of Americans killed in action during three years of war in Korea. (3)

7. In 1965 alone, more Americans died of cancer than were killed in action during World War II.

II. WHAT WAS THE MILITARY MANPOWER LOSS DURING WORLD WAR II FROM CANCER?

1. Of approximately 5,000,000 men between the ages of 18 to 37 rejected for medical reasons during the last war, 32,200 were rejected for cancer and other neoplasms. (5)
    a. This would have been sufficient to man at least two Army Infantry Divisions of World War II strength. (14,477 men to each division) (6)

III. WHAT IS THE ECONOMIC LOSS FROM CANCER?

In excess of $2 billion annually:

1. Direct costs for diagnosis, treatment, and care of cancer patients amounted to $1.2 billion in 1962.

    More than half of the direct costs is for hospital care. Approximately 950,000 patients with a primary diagnosis of cancer spent more than 14 million days in short term hospitals. The cost of the services of physicians in private practice for cancer patients is $172 million. (7)

2. A total of 54 million work days was lost in 1962 as a result of illness and disability caused by cancer by members of the labor force, housewives and others. These days lost are equivalent to 221,000 man years of productivity, or $1 billion in terms of 1962 dollars. (7)

IV. WHAT WAS THE ECONOMIC LOSS IN INCOME AND TAXES THROUGH THE DEATH OF CANCER VICTIMS IN THE WORKING AGE GROUPS?

1. 122,187 Americans between the ages of 25 and 64 years of age died in 1963 from cancer. About 54% of the non-institutionalized population of the country were actually employed or in the Armed Forces during that year.

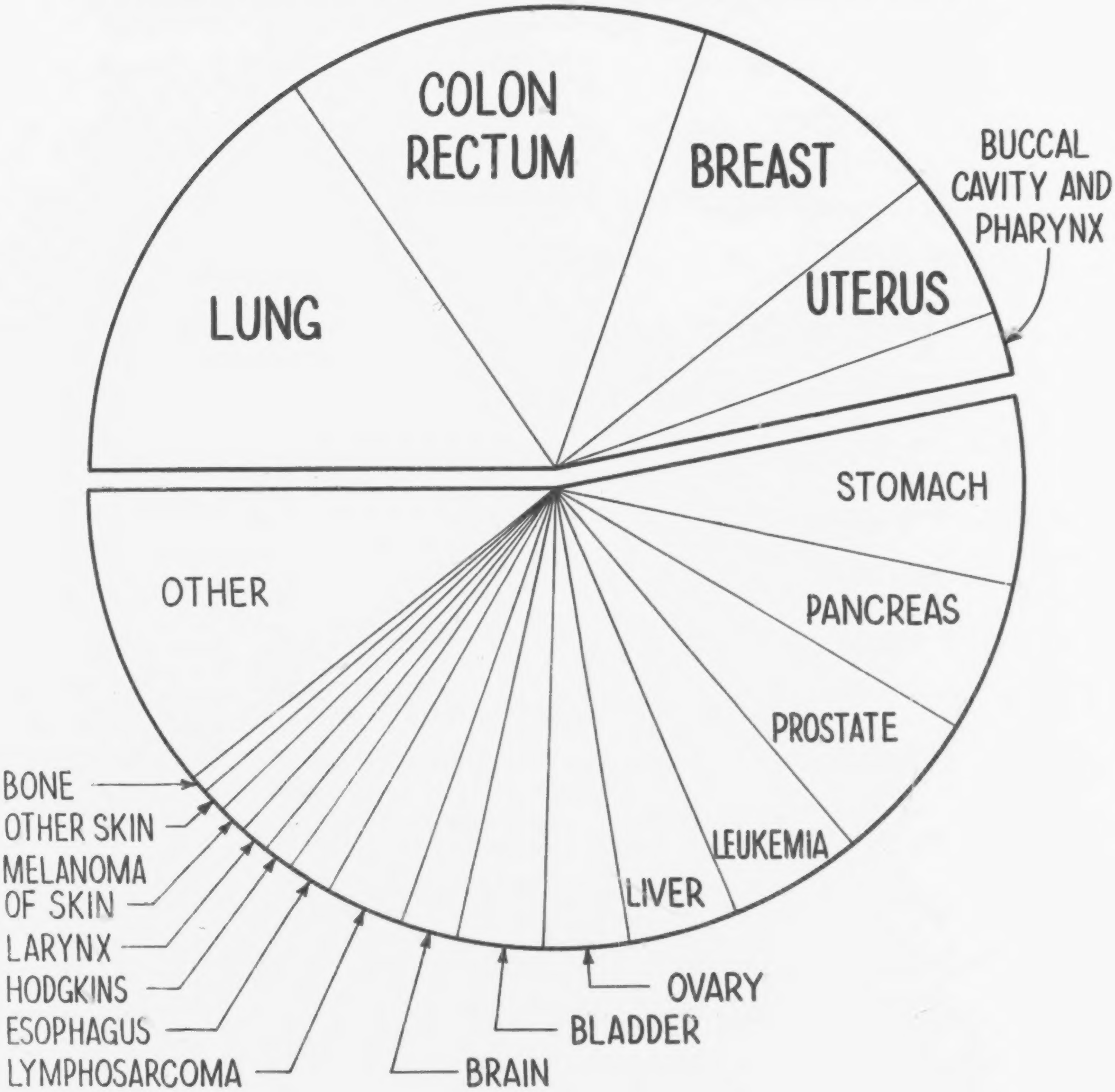
   This means that if 54% of these 122,187 Americans had been alive and able to work an extra year, they could have earned in 1964 over $435 million and paid taxes to the Federal Government on this income totaling over $60 million. (20)

V. HOW MANY PEOPLE ARE SUFFERING FROM CANCER IN THE UNITED STATES?

1. An estimated 870,000 people will be under treatment for cancer in 1966. (2)
   a. There will be about 570,000 new cancer cases (diagnosed for the first time) in 1966. (2)
2. About one out of every four people now alive in the United States will have cancer at some time in his life unless new preventive measures are found. (2) This means that if cancer illness rates are not cut:
   a. Approximately 49 million people now alive in the United States will have some form of cancer during their lifetime. (2)
   b. Approximately 33 million Americans now alive will DIE from cancer unless preventive new treatments or cures are found.

CANCER SITES

PROPORTION OF 296,320 YEARLY DEATHS



Estimated Cancer Deaths by Sex and Site – 1967

SITE	BOTH SEXES	MALE	FEMALE
All Sites	305,000	167,000	138,000
Oral Cancer	6,950	5,200	1,750
Lip	125	100	25
Tongue	1,625	1,200	425
Salivary Glands	700	450	250
Floor of Mouth	500	400	100
Other & Unspecified Mouth	1,100	750	350
Pharynx	2,900	2,300	600
Digestive Organs	95,900	51,700	44,200
Esophagus	5,500	4,200	1,300
Stomach	17,500	10,700	6,800
Small Intestine	800	400	400
Large Intestine (Colon)	33,200	15,100	18,100
Rectum	10,400	5,800	4,600
Liver & Biliary Passages	9,300	4,500	4,800
Pancreas	17,400	10,100	7,300
Other & Unspecified Digestive	1,800	900	900
Respiratory System	55,400	47,100	8,300
Larynx	2,800	2,500	300
Lung	51,800	44,100	7,700
Other & Unspecified Respiratory	800	500	300
Breast	27,150	250	26,900
Genital Organs	40,700	17,150	23,550
Cervix Uteri	9,800	–	9,800
Corpus Uteri	3,700	–	3,700
Ovary	9,100	–	9,100
Prostate	16,200	16,200	–
Testis	650	650	–
Other & Unspecified Genital	1,250	300	950
Urinary Organs	14,500	9,800	4,700
Kidney	5,800	3,700	2,100
Bladder & Other Urinary	8,700	6,100	2,600
Skin	4,600	2,800	1,800
Eye	400	200	200
Brain & Central Nervous System	7,500	4,300	3,200
Endocrine Glands	1,500	600	900
Thyroid	1,050	350	700
Other & Unspecified Endocrine	450	250	200
Bone	1,600	900	700
Soft Tissue	1,300	700	600
Leukemia	14,400	8,400	6,000
Lymphomas	16,000	9,000	7,000
Lymphosarcoma & Reticulosarcoma	7,600	4,200	3,400
Hodgkin's Disease	3,400	2,100	1,300
Multiple Myeloma	3,900	2,100	1,800
Other Lymphomas	1,100	600	500
All Other & Unspecified	17,100	8,900	8,200

3. On the average, cancer will strike about 2 out of every 3 American families. (2)
4. A little over half of all cases of cancer are in people under 65 years.(21)

VI. DO MORE MEN DIE FROM CANCER THAN WOMEN?

Yes.

1. The 1963 cancer death rate among men was 22% higher than the female cancer death rate. (These are crude death rates) (1)
    a. Of 285,362 cancer deaths in 1963, male deaths totaled 154,288, and female deaths, 131,074. (1)
2. The ratio in 1966 will be about 55 men to 45 women. (2)
    a. Of the estimated 300,000 cancer deaths in 1966, 164,000 will be men and 136,000 women. (2)

VII. HOW MANY VETERANS WILL BE VICTIMS OF CANCER?

1. On the basis that 1 out of 4 Americans now living will have cancer unless new preventive measures are found (2), and that there are a total of 22,166,000 veterans in civil life eligible for VA benefits and services (8) 5,541,500 veterans will at some time be hospitalized or will be entitled to hospitalization for cancer.
2. If 80% of the veterans developing cancer receive full hospitalization for cancer from the Veterans Administration, they will cost the taxpayers

about $3.4 billion.

If only 50% receive full hospitalization, they will cost the taxpayers $2.1 billion. (9)

VIII. HOW MUCH DOES CANCER COST THE VETERANS ADMINISTRATION?

1. It is estimated that the total annual cost of cancer to the Veterans Administration is approximately $41 million.
    a. Hospital treatment accounts for about $21 million of this total. (8)
    b. As of September 1963, 18,830 veterans were receiving compensation or pension payments where the only or major disability was diagnosed as a malignancy. The approximate annual value of these awards was $19,971,768. (10)

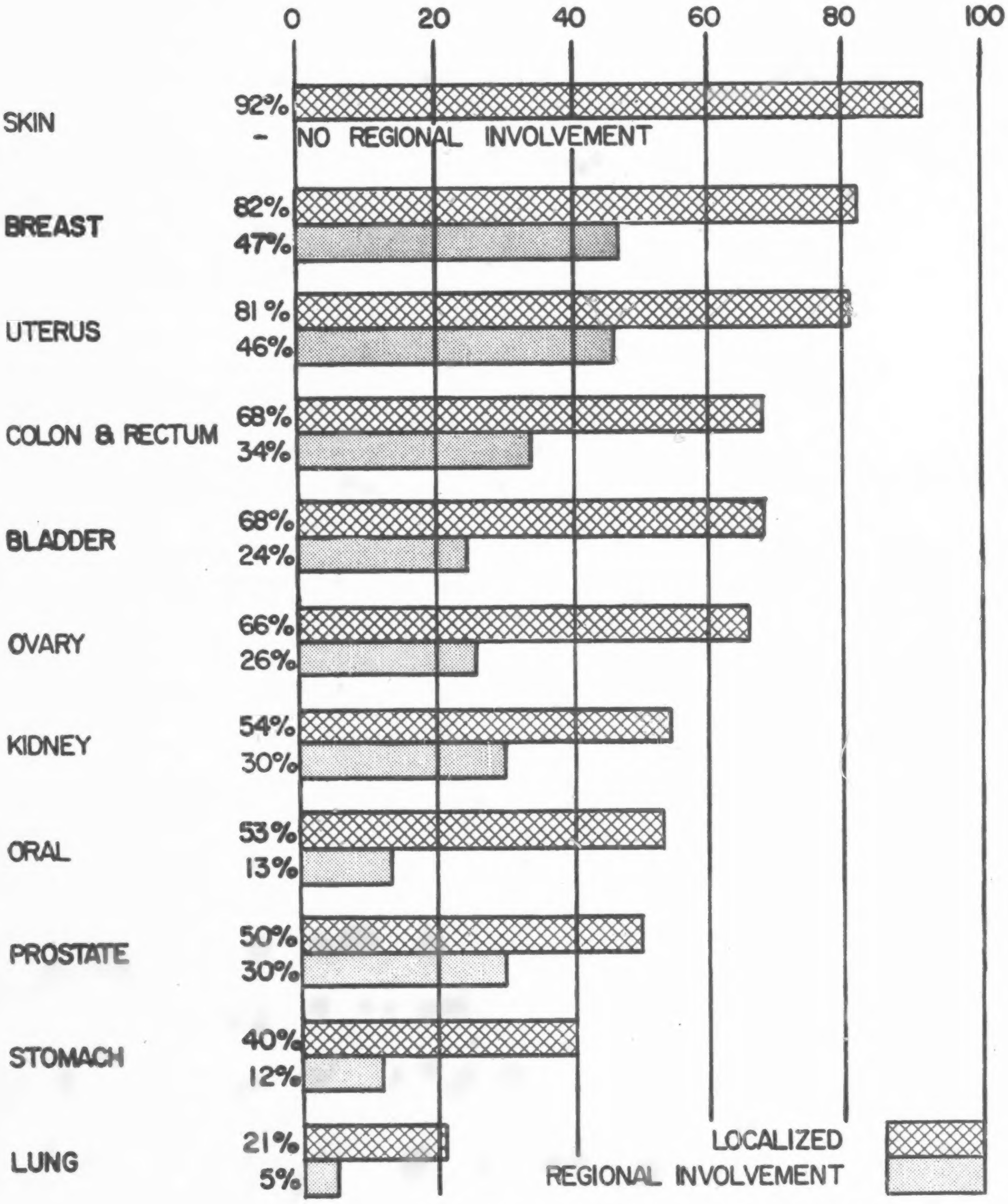
IX. WHAT ARE TODAY'S CHANCES OF RECOVERY FROM CANCER?

1. About 570,000 new cancer cases will be diagnosed for the first time in 1966.

    One cancer patient in three is now being saved, so about 190,000 Americans will be saved from cancer this year. A few years ago only 1 in 4 was saved; this is a gain in lives saved of some 47,500 patients each year. (2)
2. Of every 6 persons who get cancer today, 2 will be saved and 4 will die. Of the 4 who die, one could have been saved had proper treatment and

early diagnosis been received in time. Thus, half of those who get cancer could and should be saved with present knowledge. (2)

FIVE - YEAR CANCER SURVIVAL RATES* FOR SELECTED SITES (2)



*ADJUSTED FOR NORMAL LIFE EXPECTANCY

X. HOW MANY SPECIAL CANCER HOSPITALS ARE THERE IN THE UNITED STATES?

1. There are ten special cancer hospitals in the United States (see Appendix I). However, most cancer patients requiring hospitalization are taken care of routinely in general hospitals.
2. In 1945, there were 392 cancer clinics and registries in the United States and Canada approved by the American College of Surgeons. Today there are over 1,000, plus the related expansion of teaching, research and treatment centers. (22)

XI. HOW MUCH MONEY IS AVAILABLE FOR RESEARCH TO FIND NEW TREATMENTS AND CURES FOR CANCER FROM THE FEDERAL GOVERNMENT & LEADING VOLUNTARY AGENCIES?

1. From the major sources about $176,078,248 divided as follows:
   a. Government funds total about $155,672,000

(a) The National Cancer Institute, USPHS, estimated for fiscal 1966 (11)

Intramural research	$17,376,000	
Research projects	67,946,000	
Research fellowships	3,742,000	
Collaborative studies	59,931,000	$148,995,000

(b) The Atomic Energy Commission's estimate for fiscal 1966, of which $500,000 is for its off-site research program in cancer (12) — 5,677,000

(c)	Out of a total medical research appropriation of $36,026,000 in fiscal 1965, the Veterans Administration will spend for cancer research an estimated (13)	1,000,000
		$155,672,000

b. Non-Government funds listed total an estimated $20,406,248.

(a)	The American Cancer Society allocated in 1965 for cancer research about (23)	$ 15,416,151
(b)	The Damon Runyon Memorial Fund, in 1964 allocated (14)	1,588,400
(c)	Contributions by various private foundations and other private sources in 1964 to the Sloan-Kettering Institute at the Memorial Center for Cancer & Allied Diseases for cancer research totaled (15) The Institute's 1965 operating budget as of April 30, 1965, was $8,570,814. (15)	3,401,697
(d)	Numerous other private foundations and funds throughout the United States also support research in cancer, though the exact total is not known.	
		$ 20,406,248

2. This means that we are spending about $594 per cancer death annually, or $200 per case under treatment; but only $3.60 per American now alive who will have cancer unless cures or preventive measures are found.

3. In contrast to the $176 million available from the major public and private sources for cancer research:

a. It is estimated that the Department of Agriculture in fiscal 1966 will spend about $226 million through its Agricultural Research Service. (16)

b. The people of the United States spent in 1964 approximately: (17)

$553,740,000 for greeting cards;

$358,800,000 for chewing gum;

$199,580,000 for ballpoint pens and refills.

XII. HOW MUCH MONEY HAS THE AMERICAN CANCER SOCIETY RAISED FOR LAY AND PROFESSIONAL EDUCATION AS WELL AS SERVICE TO CANCER PATIENTS, EXCLUDING RESEARCH?

1. Out of the total of $45,808,754 raised in 1965 in contributions and legacies, the American Cancer Society and all its state and local divisions allocated 48% - about $21.8 million for these purposes in 1965, over and above the amount raised for research. (23) This does not include fund-raising or administration costs.

   a. This is in contrast to $832,862, total raised nationally by the Cancer Society in 1944, and $372,057.17 in 1943 when the Society allocated no funds for research whatever. (18)

XIII. HOW DO DEATHS FROM CANCER COMPARE WITH DEATHS FROM OTHER DISEASES?

1. The Number Two Killer of the United States is Cancer. Only cardio-

vascular-renal diseases (mainly arteriosclerosis) cause more deaths. (1)

a. Over 9600 times as many people died of cancer in 1965 as died of polio in the same year. (1) Polio deaths = 20.

b. Over 37 times as many people died of cancer as of tuberculosis in 1965. (1)

c. In 1964, five times as many people died from lung cancer alone than from all forms of tuberculosis. In 1964 cancer of the lung killed an estimated 43,000 Americans; tuberculosis killed 8,100. (1)

(a) Lung cancer, the chief cause of cancer death in men, will kill in 1966 approximately 40,000 men and 7,000 women, a total of 47,000.

XIV. IS CANCER PRIMARILY A DISEASE OF OLD AGE?

1. No. Of 285,362 deaths in 1963 from cancer and other malignant tumors: (1)

a. 129,069 or 45%, were under 65 years old, and 55% were over 65.

b. 25,629 or about 9% were under 45 years old.

c. 6,882 or about 2.4% were under 25 years old.

XV. HOW MANY CHILDREN DOES CANCER KILL?

1. In the United States, cancer today kills more children from 1 to 15 years of age than any other disease. (1)

a. In 1963, 4,288 children from 1 to 15 years of age died from cancer; about half died from leukemia (2,067). (1)

XVI. WHAT ARE THE MAJOR CLINICAL RESEARCH PAY OFFS AND DEVELOPMENTS IN THE TREATMENT OF CANCER?

1. Survivals of more than 5 years have been obtained through the use of drugs in several different forms of cancer which had a high fatality rate once the disease metastasized:
    1. Choriocarcinoma treated with Methotrexate. (24)
    2. Retinoblastoma (tumor of the eye) treated with TEM plus x-rays. (24)
    3. Wilm's tumor (tumor of the kidney in children) treated with Actinomycin D and x-ray. (25)

2. In some cases, chemotherapy, while not curative, has delayed the progression of the disease and therefore prolonged survival. This appears to be true in breast cancer and carcinoma of the prostate, with the use of estrogen preparations in cancer of the prostate and the use of estrogen preparations or androgens, depending on age of patient, in breast cancer.

3. For the first time, skin tumors were successfully treated with topical applications of ointments containing antitumor drugs. (26)

    Treatment of more than 500 primary skin lesions in about 100 patients, applying a hydrophilic cream base containing 0.5% to 20% 5-Fluorouracil (5-FU) caused regression in more than 90% of basal cell carcinomas and premalignant solar keratoses involving large areas of the skin. Differential action on neoplastic and normal tissues, respectively, resulted in minimal or no scar formation. Resistant lesions regressed when 30% 5-FU was applied. Regression also occurred with epitheliomas arising in severe and extensive radiodermatitis, metastatic skin lesions of adenocarcinomas, and local recurrence of lymphosarcoma. Regressions have lasted for observation periods of up to 5 years. (26)

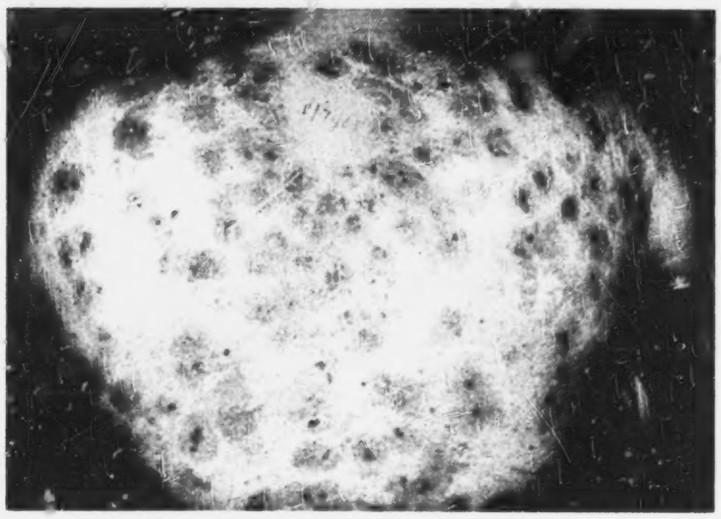


Fig. 1
Patient with multiple basal cell carcinoma. Tumors are reacting to ointment containing anti-tumor chemical (Trenimon 0.05%). Each dark area represents a basal cell carcinoma. Patient had 140 tumors on his back at that time. Normal skin adjacent to tumors (including scars from previous surgery or radiation therapy) are not reacting.

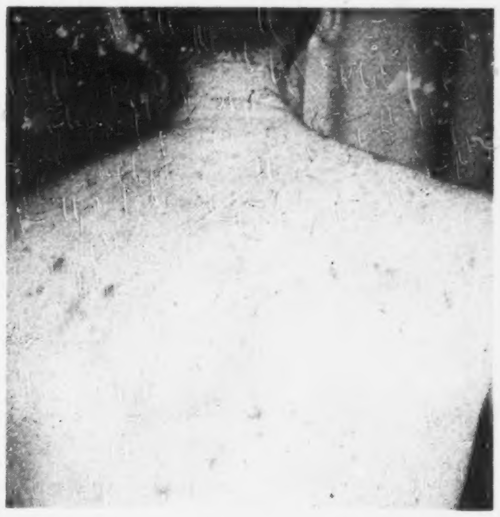


Fig. 2
Patient shown in fig. 2 at 3 months after discontinuing applications of ointment. Tumors have resolved. Dark areas are scars from previous surgical or radiation treatments.

XVII. WHAT ARE THE LEADS IN THE FIELD OF CANCER RESEARCH?

1. Today cancer is being attacked by research from within nearly every branch of science. The cancer studies are diverse; many are complex. The following highlights will indicate their scope, and some of the practical achievements; (19)

a. Basic research --

The biology and chemistry of growth is yielding significant knowledge about cancer and other diseases. The aim is to understand

3

NEOPLASTIC DISEASES RESPONDING TO CHEMOTHERAPY

DIAGNOSES	POLYFUNCTIONAL ALKYLATING AGENTS	ANTIMETABOLITES	RADIOACTIVE ISOTOPES	STEROID HORMONES	MISCELLANEOUS DRUGS **	RESULTS
Leukemia Acute, Children	Cyclophosphamide	6-MP Methotrexate®		Adrenal Cortical Hormones	Vincristine	70% bone marrow improvement; 50% patients live one year or longer.
Acute, Adults		6-MP Methotrexate®		Adrenal Cortical Hormones		15-25% improved for several months or longer.
Chronic Myelocytic	Myleran® HN2	6-MP	P^{32}		Demecolcine	Patients maintained in good condition during major portion of disease; life occasionally prolonged.
Chronic Lymphatic	Chlorambucil THIO-TEPA®		P^{32}	Adrenal Cortical Hormones		Patients maintained in good condition during major portion of disease; life occasionally prolonged.
Hodgkin's Disease	Chlorambucil HN2 THIO-TEPA®			Adrenal Cortical Hormones	Vinblastine **Neculan®**	Occasional favorable response, but no definite prolongation of life.
Lymphosarcoma	Chlorambucil HN2 THIO-TEPA®			Adrenal Cortical Hormones	Vinblastine	Occasional favorable response, but no definite prolongation of life.
Multiple Myeloma	Alkeran® Cyclophosphamide		P^{32}	Adrenal Cortical Hormones	Urethane	Symptomatic relief in about 50% of cases, and objective improvement in 20-30%.
Polycythemia Vera	Myleran® Chlorambucil HN2		P^{32}			Prolonged clinical remissions, particularly with P^{32}.
Carcinoma of Lung	HN2 Cyclophosphamide					Brief improvement in about 30% of cases.
Carcinoma of Ovary	THIO-TEPA® Chlorambucil	5-FU				30 to 50% of cases improved for one to three months, sometimes longer.
Carcinoma of Thyroid			I^{131}			Frequently marked improvement in properly selected cases.
Carcinoma of Breast	THIO-TEPA® Chlorambucil	5-FU		Estrogens Androgens Adrenal Cortical Hormones		20 to 50% improved by hormonal therapy; life may be prolonged in some cases.
Carcinoma of Endometrium				Delalutin®		25% respond, chiefly pulmonary metastases.
Carcinoma of Prostate				Estrogens		80% of cases respond to hormonal therapy; definite prolongation of life.
Wilms' Tumor, Children	HN2 Cyclophosphamide				Actinomycin D	Temporary regression; 50% pulmonary metastases respond with long survivors.
Choriocarcinoma, Female	HN2 Chlorambucil	Methotrexate®			Actinomycin D Vinblastine	80% respond, of whom 40% show "permanent" regression.
Carcinoma of Colon		5-FU				15% respond for several months or longer.
Carcinoma of Adrenal					o,p'-DDD	Tumor regression and decrease in hyperadrenocorticism in selected cases.
Carcinoma of Testis	Chlorambucil*	Methotrexate®*			Actinomycin D*	35% of patients show a favorable and sometimes prolonged response.
Miscellaneous Carcinomas and Sarcomas	HN2 THIO-TEPA® Chlorambucil Cyclophosphamide	5-FU		Adrenal Cortical Hormones		In rare instances and in specific situations, favorable responses occur.
*Given in Combination						
Regional Cancer Chemotherapy						
Pleural, Pericardial and Abdominal Effusions (instillation into appropriate cavity)	HN2		Au^{198} $CrP^{32}O_4$		Quinacrine	About 25 to 50% of patients respond.
Carcinoma in Facial Areas		Methotrexate® + Citrovorum Factor (intraarterial infusion)				Favorable response of tumors supplied by external carotid artery in selected cases.
Tumors of the Extremities	HN2 (extracorporeal perfusion)					Response in selected cases.
Leukemic Involvement Central Nervous System		Methotrexate® (intrathecal injection)				About 80% of children with CNS involvement respond temporarily.

**includes Antibiotics and Metaphase Inhibitors

SPECIFIC AGENTS USED IN CANCER CHEMOTHERAPY

	AGENTS	PRINCIPAL ROUTE OF ADMINISTRATION	USUAL DOSE	ACUTE TOXIC SIGNS	MAJOR LATE TOXIC MANIFESTATIONS
Steroid Compounds	**Androgen** Testosterone propionate	I.M.	50-100 mg. 3 x weekly	None	Fluid retention, masculinization.
	Fluoxymesterone (Halotestin®)	Oral	10-20 mg./day		
	Estrogen Diethylstilbestrol	Oral	1-5 mg. 3/day	Occasional N. & V.*	
	Ethinyl estradiol (Estinyl®)	Oral	0.1-1.0 mg. 3/day		Fluid retention, feminization, uterine bleeding.
	Progestin Hydroxyprogesterone caproate (Delalutin®)	I.M.	1 gm. 2 x weekly	None	
	Adrenal Cortical Compounds Cortisone acetate	Oral	50-300 mg./day		
	Hydrocortisone acetate	Oral	50-200 mg./day	None	Fluid retention, hypertension, diabetes, increased susceptibility to infection.
	Prednisone (Meticorten®)	Oral	20-100 mg./day		
Radioactive Isotopes	**Iodine** (I^{131})	Oral, I.V.	100-200 mc.	None	Myxedema, bone marrow depression, renal damage.
	Phosphorus (P^{32})	Oral, I.V.	3-7 mc.	None	
	(P^{32} as chromic phosphate)	Intracavitary	5-10 mc.	None	Bone marrow depression.
	Gold (Au^{198})	Intracavitary	75-150 mc.	None	
Polyfunctional Alkylating Agents	**Methylbis (β-Chloroethyl) Amine HCl** (HN2, Mustargen®)	I.V.	.0.4 mg./kg. Single or Divided Doses	N. & V.	Therapeutic doses moderately depress peripheral blood cell count; excessive doses cause severe bone marrow depression with leukopenia, thrombocytopenia, and bleeding. Maximum toxicity may occur two or three weeks after last dose. Dosage, therefore, must be carefully controlled. Alopecia and hemorrhagic cystitis occur occasionally with cyclophosphamide.
	Chlorambucil (Leukeran®)	Oral	0.1-0.2 mg./kg./day 6-12 mg./day	None	
	L-Sarcolysin (Melphalan, Alkeran®)	Oral	6-10 mg./day initially 2-4 mg./day maintenance	None	
	Cyclophosphamide (Endoxan, Cytoxan®)	I.V. Oral	3.5-5.0 mg./kg./day x 10 (40-60 mg./kg. Single Dose) 50-300 mg./day	N. & V.	
	Triethylenethiophosphoramide (TSPA, THIO-TEPA®)	I.V.	0.2 mg./kg. x 5	None	
	1,4-Dimethanesulfonyloxybutane (Busulfan, Myleran®)	Oral	2-8 mg./day 150-250 mg./course	None	
Antimetabolites	**4-Amino-N^{10}-methylpteroylglutamic acid** (Amethopterin, Methotrexate®)	Oral	2.5-5.0 mg./day	None	Oral and digestive tract ulcerations; bone marrow depression with leukopenia, thrombocytopenia, and bleeding.
	6-Mercaptopurine (6-MP, Purinethol®)	Oral	2.5 mg./kg./day	None	Therapeutic doses usually well tolerated; excessive doses cause bone marrow depression.
	6-Thioguanine (6-TG)	Oral	2.5 mg./kg./day		
	5-Fluorouracil (5-FU)	I.V.	15 mg./kg./day x 3-5	None	Stomatitis, nausea, GI injury, bone marrow depression.
Antibiotics	**Actinomycin D** (Cosmegen®)	I.V.	15 gamma/kg./day x 5 or 50 gamma/kg. weekly	N. & V.	Stomatitis, GI disturbances, alopecia, bone marrow depression.
Metaphase Inhibitors	Demecolcine (Colcemide®)	Oral	5-8 mg./day	None	Alopecia, bone marrow depression.
	Vinblastine (Velban®)	I. V.	0.1-0.15 mg./kg. weekly	N & V	Alopecia, muscle weakness, areflexia, bone marrow depression.
	Vincristine (Oncovin®)	I. V.	0. 03-0.075 mg./kg. weekly	None	Areflexia, peripheral neuritis, paralytic ileus, mild marrow bone depression.

*Nausea and Vomiting

SPECIFIC AGENTS USED IN CANCER CHEMOTHERAPY

	AGENTS	PRINCIPAL ROUTE OF ADMINISTRATION	USUAL DOSE	ACUTE TOXIC SIGNS	MAJOR LATE TOXIC MANIFESTATIONS
Miscellaneous Drugs	o,p'-DDD 1, 1 - Dichloro-2-(o-chlorophenyl) -2-(p-chlorophenyl) -ethane	Oral	2-10gm./day	N & V	Skin eruptions, diarrhea, mental depression, muscle tremors.
	Urethane	Oral	2-4 gm./day	N & V	Bone marrow depression.
	Quinacrine (Atabrine®)	Intra-cavitary	100-200 mg./day x 5	Local pain, Fever	None.
	N-methylhydrazine (Natulan®)	Oral	2.0-4.0mg./kg./day for 2-3 weeks then 1.0mg./kg./day	N & V	Bone marrow depression.

the functions of the fundamental unit of life, the cell, and its nucleic acids, the chemicals that control cell growth.

b. Immunology --

The study of the human body's resistance to disease offers cancer scientists some of the most promising leads to possible cancer control. Evidence is being accumulated on the existence of a natural resistance to cancer by healthy persons.

The role of the thymus gland in stimulating this immune mechanism is a factor under study.

If a causative agent for human cancer, e.g., a virus or viruses could be found, immunization by a vaccine might be possible.

c. Chemotherapy of cancer --

The search for drugs that can halt or slow down tumor growth is a major undertaking of cancer research. Several thousand compounds are tested annually for anti-cancer activity. A group of these drugs have cured cancers in animals. About two dozen drugs are of temporary benefit to cancer patients. One or more of these compounds are at times capable of inducing a cure of the human disease. For example, the rare uterine cancer called choriocarcinoma in many instances has been cured by the drug Methotrexate. Great progress has also been made in the drug treatment of childhood leukemia.

Remissions can be induced in more than 90% of children with leukemia by the use of drug combinations. By altering the schedule of drug administration, methotrexate remissions have been prolonged by administering the drug in large doses twice weekly as compared to daily doses. By giving the drugs in many combinations and sequences, the survival time in acute leukemia is being steadily increased.

d. Supportive therapy --

is designed to make cancer patients more comfortable and to control complications of the disease. Recent research has developed ways of preventing hemorrhage and infection in leukemia patients by transfusion of platelets.

Another potential adjunct to treatment being evaluated is the isolation of patients in a relatively germfree environment during drug therapy.

e. Radiation treatment --

of cancer is being improved by the development of new instruments and more precise methods of irradiation to reduce undesirable side effects and deliver the radiation dose directly to the cancer-affected area. Conventional x-ray and super-voltage equipment is used. In addition to naturally radioactive radium, artificially produced isotopes such as I^{131} and P^{32} are available and have proved useful in treating some forms of cancer. Radiation is also being used in combination with other treatment. For example, in some cases of cancer, radiation before or after surgery appears to be of benefit to the patient. Preliminary results of therapy combining radiation and drugs are promising enough to warrant further study.

f. Cancer surgery --

is increasingly effective as a result of careful maintenance of the chemical balance of the patient's body, new techniques for replacing lost blood and for overcoming shock, new operating room equipment for monitoring patient responses, and a renewed emphasis on sterile operating room procedures.

New surgical techniques of perfusing anti-cancer drugs are proving useful in some forms of cancer. Advances have been made in reconstructive surgery, particularly following operations for cancer of the head and neck.

g. Viruses --

may play an important role in inducing some types of cancer in man. Recent viral research has shown:

(a) mouse leukemia caused by a virus is closely related to leukemia in man, thus opening up the possibility of developing vaccines or serums.

XVIII. WHAT IS ENVIRONMENTAL CANCER RESEARCH?

It is aimed at identifying factors in the world around us that increase the risk of developing malignant disease.

Several environmental carcinogens are known: excessive sunlight causes skin cancer; certain industrial dyes and coal tar derivatives used in the manufacture of rubber products cause bladder cancer in exposed workers; heavy doses of x-rays and other forms of ionizing radiation cause leukemia, bone tumors and other types of cancer.

XIX. DO CIGARETTES HELP TO CAUSE LUNG CANCER? YES!

Recently cigarette smoking (and atmospheric pollution) have been recognized as contributing factors in the development of lung cancer.

(Lung cancer, the chief cause of cancer death in men, will kill in 1966, approximately 40,000 men and 7,000 women, a total of 47,000. (2))

(In 1964, 5 times as many people died from lung cancer alone than all forms of tuberculosis. (1))

The public is being warned of the health risks associated with the use of cigarettes, and many urban areas are taking steps to rid themselves of seriously polluted air. Such measures will save lives, and as additional

environmental carcinogens are identified and controlled, countless other persons will be protected from the threat of environmental malignant disease.

XX. WHAT ARE OTHER AREAS OF RESEARCH?

Research on cancer diagnosis is one of the major approaches to solving the cancer problem. Because early diagnosis is almost always essential if cancer is to be effectively treated, methods are sought to detect the disease at the earliest possible moment, even before overt symptoms appear.

Improvements in techniques during the past decade have made it possible to study, with high precision, the bio-chemistry of the human body, and such studies may lead to the recognition of subtle changes that foreshadow malignant disease or signal its microscopic presence.

Many scientists are engaged in research on blood, urine, and other body fluids in which a cancer diagnostic clue may lie. Others are investigating the possible application of cytology to the detection of cancer of the lung, stomach, prostate gland, and other sites into which the body normally sheds cells that can be removed and examined. This procedure, the Pap smear, has proved highly successful in the detection of uterine cancer among large groups of women.

Mammography, or examination of the breast by x-ray, is under investigation as a possible diagnostic tool for detecting breast cancer.

XXI. WHAT ARE THE NEEDS IN THE FIGHT AGAINST CANCER?

1. More funds for research, research fellowships and clinical fellowships and professorships as well as training and education in cancer are needed for the American Cancer Society and other leading voluntary agencies interested in this disease, and for the National Cancer Institute of the U.S. Public Health Service.
2. More funds for the construction of cancer research center facilities are needed.
3. New treatments and cures must be found to aid the 870,000 people presently under treatment for cancer, the estimated 49,000,000 now alive who will have cancer and the 33,000,000 of these who will die from cancer unless these new treatments, cures or preventive measures are found and successfully put into use.

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(3) New York Times, July 23, 1954, quoting Defense Department report covering battle casualties during Korean conflict. Americans killed in action in Korea: 23, 345.

(4) Killed in action in World War II, 282, 025 (World Almanac 1949, p. 326; World Almanac 1946, p. 44). Cancer deaths for same period, 684, 085. (Nat'l. Office of Vital Statistics).

(5) Selective Service System, National Headquarters, chart "Estimated Principal Causes for Rejection of Registrants 18-37 Years or Age in Class IV-F and Classes with "F" Designation, August 1, 1945".

(6) Army Statistical Review, World War II, "Army Services, War Department".

(7) "A National Program to Conquer Heart Disease, Cancer and Stroke" - Report of the President's Commission on Heart Disease, Cancer and Stroke, Volume 1, December 1964.

(8) Veterans Administration Annual Report, 1963.

(9) The 1963 Annual Report of the Veterans Administration states that the median length of stay of VA patients discharged from VA general medical and surgical hospitals during calendar year 1962 was 18.4 days. The per diem cost in these VA general hospitals in fiscal 1963 was $28.33. Thus, the cost for the median hospital stay in VA general hospitals in 1962 was about $521.

Assuming an average of 1-1/2 admissions for cancer in the lifetime of a cancer patient (estimate of American Cancer Society, Statistical Research Section, 1956), a veteran receiving all hospital care from the VA would stay some 27 days in VA hospitals for a total cost of $765 (assuming no drastic change in per diem costs). If 80% of the veterans developing cancer receive full hospitalization from the VA, they will cost the taxpayers $3.4 billion. If only 50% receive full hospitalization, they will cost the taxpayers $2.1 billion.

(10) Department of Veterans Benefits, Veterans Administration, Washington, D.C., personal communication, Sept. 30, 1964 from Edward R. Silberman, Controller.

(11) U. S. Public Health Service, National Cancer Institute, Estimated Fiscal 1966 Appropriations:

Intramural research	$17,376,000
Research projects (grants-in-aid)	67,946,000
Research fellowships	3,742,000
Training grants	10,900,000
Collaborative Studies	59,931,000
Other	3,811,000
Total Appropriation	$163,706,000

(12) Personal communication dated August 4, 1965 from Leonard A. Sagan, M.D., Medical Research Branch, Division of Biology & Medicine, U.S. Atomic Energy Commission, Washington, D.C.

(13) Edward Dunner, M.D., Director, Research Service, Dept. of Medicine & Surgery, Veterans Administration, Washington, D.C.

(14) Damon Runyon Memorial Fund for Cancer Research, New York, N.Y.

(15) Information obtained from Mr. C. E. Cameron, Vice President, Memorial Sloan-Kettering Cancer Center, New York City, July 30,1965.

(16) Budget of the U.S. Government, 1966.

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(21) "Cancer in Connecticut, 1935-51" issued by the Connecticut State Department of Health, 1955, Hartford, Connecticut.

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(23) 1964 and 1965 Annual Reports, American Cancer Society, New York.

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(25) Sidney Farber, M.D., Children's Cancer Research Foundation, Boston.

(26) Medical World News Annual, 1966. Updated by Edmund Klein, M.D., Chief, Department of Dermatology, Roswell Park Memorial Institute, Buffalo, New York.

CREDITS

Cover Photographs: Courtesy Memorial Sloan-Kettering Cancer Center.
Chart Page 4: Courtesy American Cancer Society.
Chart Page 5: Courtesy American Cancer Society.
Chart Page 8: Source - End Results and Mortality Trends in Cancer,
National Cancer Institute Monograph No. 6.
Photographs Page 14: Courtesy Dr. Edmund Klein, Roswell Park,
Buffalo, N. Y.
Charts Pages 15, 16 & 17: Courtesy Medical World News and
Sloan Kettering.

APPENDIX I

HOW MANY SPECIAL CANCER HOSPITALS ARE THERE IN THE UNITED STATES?

1. "Cancer hospitals" are only those specialized hospitals limited to the care of cancer patients. These institutions have facilities for examination, diagnosis, and treatment. The American College of Surgeons lists the following as "cancer hospitals" conducting approved cancer programs: (19)

   Colorado

   Penrose Cancer Hospital, Colorado Springs

   Massachusetts

   Pondville Hospital, Walpole

   Westfield State Sanatorium (approved by American College of Surgeons for one year), Westfield

   Missouri

   Ellis Fischel State Cancer Hospital, Columbia

   New York

   Roswell Park Memorial Institute, Buffalo

   Francis Delafield Hospital, New York City

   Memorial-Sloan Kettering Cancer Center, New York City
   - James Ewing Hospital
   - Memorial Hospital

   Pennsylvania

   American Oncologic Hospital, Philadelphia

   Texas

   M.D. Anderson Hospital & Tumor Institute, Houston

   Puerto Rico

   Dr. I. Gonzalez Martinez Oncologic Hospital, Santurce

The American College of Surgeons also lists several hundred general hospitals which provide approved cancer consultation and treatment services.

WHAT ARE THE FACTS ABOUT

MENTAL ILLNESSES?

WHAT ARE THE FACTS ABOUT MENTAL ILLNESS IN THE UNITED STATES?

WHAT ARE THE FACTS ABOUT MENTAL ILLNESS IN THE UNITED STATES?

I. HOW MANY PEOPLE IN THE UNITED STATES ARE SUFFERING FROM SOME FORM OF MENTAL ILLNESS?

1. An estimated 19,000,000 people in the United States are suffering from some form of mental or emotional illness, from mild to severe, that needs psychiatric treatment. (1)
   a. This means that about one in every 10 persons is now suffering from some form of mental illness of varying degrees of severity.
2. Mental illness or other personality disturbances are usually significant factors in criminal behavior, delinquency, suicide, alcoholism, narcotics addiction, and very often, in cases of divorce. (2)
   a. About 60,000 persons in the U.S. are drug addicts. (2)
   b. An estimated 20,510 people committed suicide in 1964. (3) Suicide is now the tenth leading cause of death in this country.
3. Mental illness is known to be an important factor in many physical illnesses, even heart disease and tuberculosis. (1)
4. At least 50% of all the millions of medical and surgical cases treated by private doctors and hospitals have a mental illness complication. (1)
5. An estimated 500,000 mentally ill children in the U. S. are classified as psychiatric or borderline cases. Most of these children are suffering from the psychiatric disorder known as childhood schizophrenia. (1)
   a. Only a very small percentage of the total are receiving any kind of

psychiatric treatment. (1)

6. Emotional disturbances and mental illness are an important factor in the cause of 75% of all accidents. (1)

II. HOW MANY ALCOHOLICS ARE THERE IN THE UNITED STATES TODAY?

1. About 5,000,000 people in the U.S. are alcoholics, affecting 20 million family members. An estimated 200,000 new cases develop each year. (5)
   a. FBI reports showed 1.5 million arrests for "drunkenness" in 1963, and an additional 215,000 arrests for "driving while intoxicated." (5)

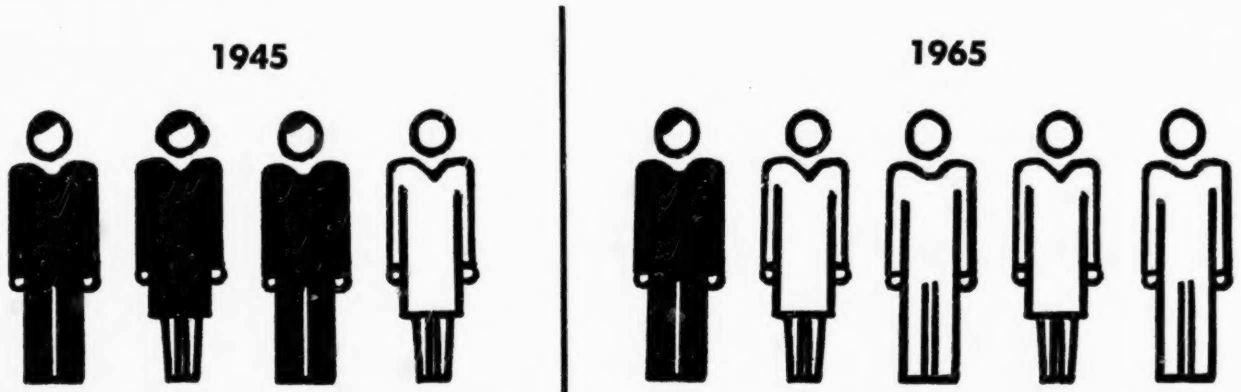
   b. One out of every 7 admissions to state and county mental hospitals is an alcoholic. (5)
   c. Losses to industry from absenteeism, and other occupational problems, associated with alcoholism are about $1 billion annually. An additional $1.25 billion is spent each year to provide care, financial support and treatment for alcoholics and their families. (5)

d. A recent study of cases of Aid to Families with Dependent Children found alcoholism as a major factor in 14% of the families receiving tax monies under this program. (5)

e. A national public opinion survey in 1965 found that 1 in every 5 adults questioned admitted constant worry because they "drink too much for their own good." (5)

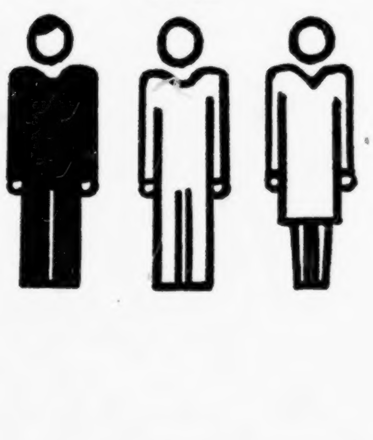
III. HOW MANY PEOPLE ARE BEING TREATED FOR MENTAL ILLNESS?

1. An estimated 3,921,000 Americans were treated for mental illness in 1965. (7)
2. There is an increasing trend away from the state mental hospital as the primary source of treatment. Twenty years ago, state institutions handled 3 out of every 4 mental patients; in 1965, they cared for only 1 in every 5 persons receiving psychiatric treatment. (7)



3 out of 4 went to a State Hospital

1 out of 5 went to a State Hospital



of patients treated in mental health clinics or by psychiatrists in private practice only

1 out of 3 has to be hospitalized

There is a parallel trend increasingly emphasizing outpatient care and partial hospitalization as an alternative to 24-hour hospitalization. In 1965, almost 2 in every 3 patients were not hospitalized; they received private office psychiatric care or were treated in one of the 2,000 mental health clinics in the U.S. (7)

3. The following table lists where the 3.9 million mental patients received treatment in 1965: (7)

State & county mental hospitals	807,000
Private mental hospitals	110,000
General hospitals	600,000
Outpatient clinics	950,000
Psychiatric day-night units	14,000
V.A. hospitals	140,000
Private office care	1,300,000
	3,921,000

IV. WHAT IS THE EXTENT OF MENTAL ILLNESS AMONG CHILDREN?

1. An estimated 4 million children under the age or 14 are in need of some kind of psychiatric help because of emotional difficulties. Of these, between 500,000 and 1,000,000 children are so seriously disturbed that they require immediate psychiatric help. (8)
2. An amazingly high percentage of the long-term residents of state institutions were first admitted as children or young adults. (8)
    a. An analysis of a 5,000 bed hospital at Tuscaloosa, Alabama, reveals that more than half of the male schizophrenic group who have been in that hospital 20 years or more were first admitted between the ages of 14 and 29.

3. Many young children are so emotionally disturbed that they cannot be reached by educational programs. (8)
    a. A preliminary analysis of reports from Operation Head Start, a pre-kindergarten program which served 600,000 children last summer, indicates that at least 10% of the children were in deep emotional trouble so severe that it had already crippled their development by the age of 4. (8)

V. ARE EMOTIONALLY DISTURBED CHILDREN RECEIVING ADEQUATE CARE? NO!

1. According to the Joint Commission on Mental Illness and Health there is not a single community in this country which provides an acceptable standard of services for its mentally ill children, running the spectrum from early therapeutic intervention to social restoration in the home, the school and the community.
2. Although close to 300,000 children were seen in outpatient psychiatric clinics in 1963, in most cases the "treatment" consisted of one or two diagnostic interviews followed by the admission that there were no facilities in the particular area for prolonged treatment. Because of staff shortages, especially of psychiatric time, many clinics tell parents seeking aid for deeply troubled children to come back in 6 months or even a year. (8)

VI. WHAT LEGISLATIVE AND OTHER DEVELOPMENTS ARE MOVING TOWARD INCREASED TREATMENT OF CHILDREN IN THE HEART OF THE COMMUNITY?

1. Legislation passed by Congress in 1965 authorizes $120 million over a 4-year period for the training of teachers of the handicapped, with particular emphasis upon teachers for emotionally disturbed children.
    a. 100,000 of these specialized teachers are needed right now to staff classes, of not more than 10 children each, for the approximately 1 million children, estimated to need these individual psychological and educational services. At present, there are less than 3,000 teachers specially qualified to handle emotionally disturbed children. (8)
2. This legislation also authorizes $41 million over a 4-year period in support of research and demonstration projects designed to produce

more effective methods of teaching and re-educating the handicapped and the emotionally disturbed. (8)

3. Over the past few years, the National Institute of Mental Health has joined in the support of a number of pilot projects designed to prevent institutionalization of children by developing alternative treatment services in specialized schools or in the community. (8)

4. Legislation has also been enacted authorizing federal support for a non-governmental study of the extent of mental illness among children directed toward specific proposals to combat it. A Joint Commission on Mental Health of Children, representing more than a score of organizations active in the field, has been formed and is already under way with a number of task force studies.

5. A companion legislative effort, the Elementary and Pre-school Child Development Bill of 1965, introduced last September by Rep. Sam Gibbons of Florida, would provide funds over a 10-year period to train child development specialists to work with children in the pre-school years and in the first three grades of elementary school. Hearings on the bill, which also provides grants to state educational agencies to employ these child development specialists, have been completed in the House. A groundswell of support for its imaginative attack upon the current shortage of child mental health workers is increasing. (8)

VII. HOW MANY PEOPLE ARE HOSPITALIZED FOR MENTAL ILLNESS?

1. Slightly more than one out of every two hospital beds in the United States is occupied by a mental patient. (10)

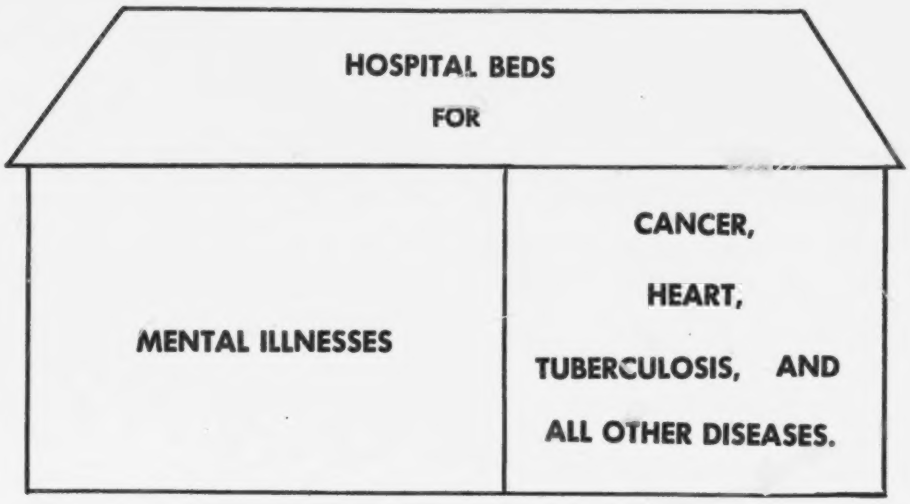
2. 712,174 or 51% of the 1,406,818 patients comprising the average daily hospital census in 1962 in all hospitals were patients in psychiatric hospitals (public and private). (10)

   a. The average daily resident patient population in public mental hospitals (state and county hospitals) in 1965 totaled 488,400. (13)

3. A large percentage of all State mental hospitals are still overcrowded. (32)

4. Admissions to psychiatric hospitals (Federal and non-Federal) totaled 511,262 in 1964. (10)

5. There are more people in hospitals for mental illness than for polio, cancer, heart disease, tuberculosis and all other diseases combined. (1)



VIII. HOW MANY PEOPLE ARE IN ALL TYPES OF PUBLIC MENTAL HOSPITALS?

1. Of the hospitalized mentally ill, 98% are in public hospitals (state, county, city, Veterans Administration and other federal hospitals). (10)

Only about 2% of mental patients are cared for in private and voluntary hospitals. (10)

IX. WHICH MENTAL ILLNESSES AFFECT THE GREATEST NUMBER OF PEOPLE?

1. About 20% of first admissions to state and county mental hospitals in 1963 were patients with schizophrenia. (14)
    a. Because of the relative youth of schizophrenic patients on admission to hospitals and their relatively low death rate, those schizophrenic patients who are not discharged tend to accumulate from year to year and to make up half of the resident populations of these hospitals (14)
2. About 20% of first admissions to state and county mental hospitals in 1963 were patients with cerebral arteriosclerosis, other circulatory disturbances, and senile brain disease. (14)
    a. Patients with cerebral arteriosclerosis, other circulatory disturbances and senile psychosis, because of their high death rate, made up only about 13% of the resident population of these mental hospitals in 1963. (14)
3. Other causes of first admissions to public non-federal mental hospitals in 1963 included: (14)

Alcoholism including alcohol intoxication	- about 15.3% of all new admissions
Personality disorders excluding alcoholism addiction	- about 11.1% of all new admissions

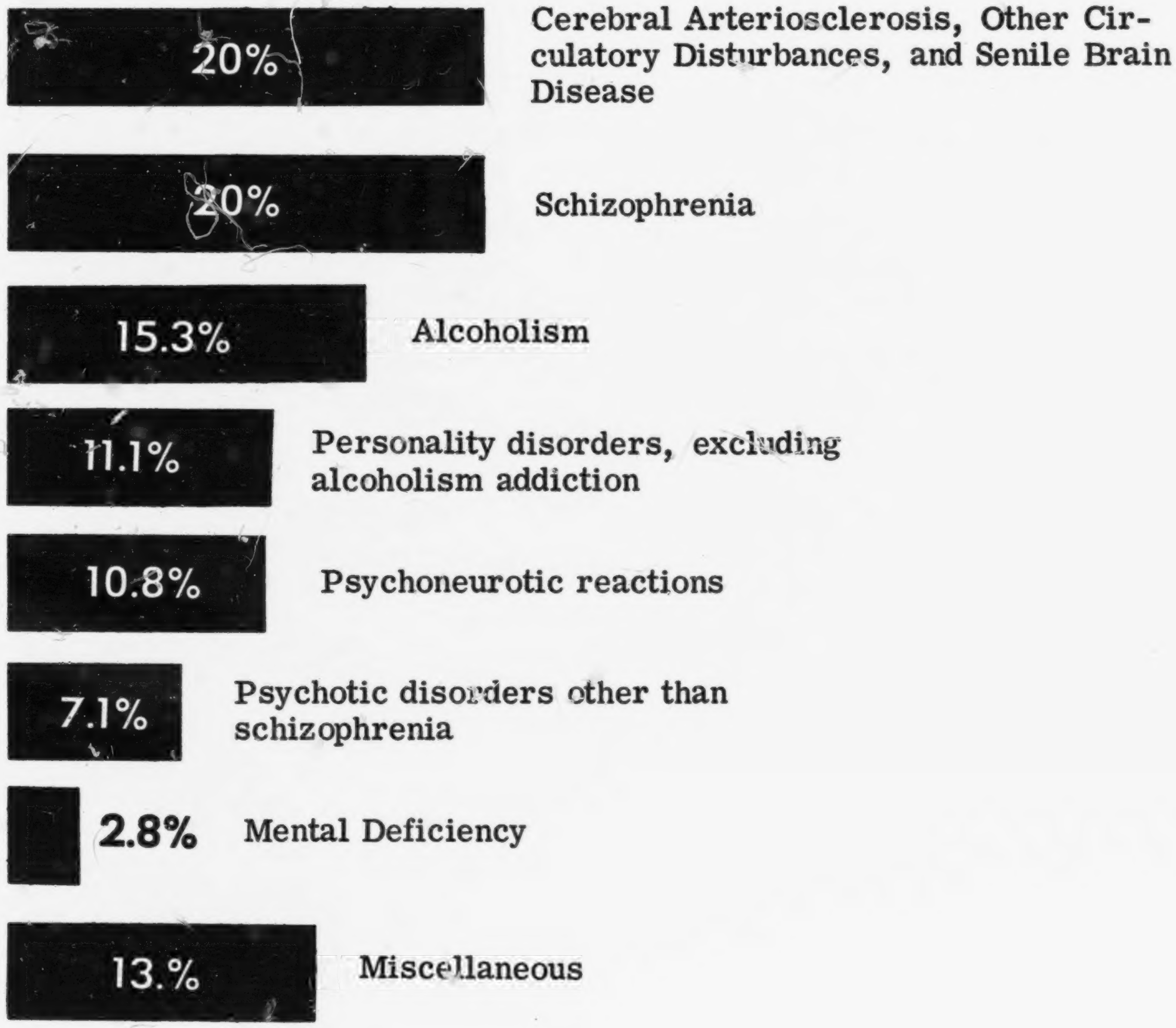
Psychoneurotic reactions - about 10.8% of all new admissions

Psychotic disorders other than schizophrenia - about 7.1% of all new admissions

Mental deficiency - about 2.8% of all new admissions

4. The remaining 13% include a variety of other disorders no one of which alone has a very high incidence. (14)

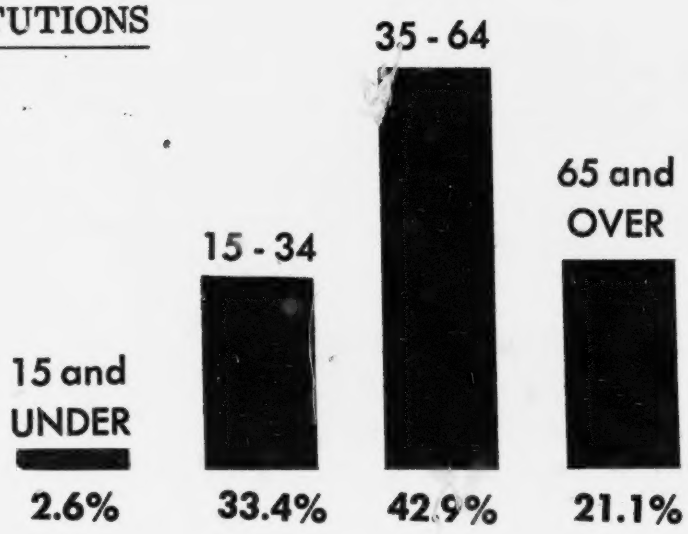
PERCENTAGE OF FIRST ADMISSIONS TO PUBLIC MENTAL HOSPITALS BY CAUSE -- 1963



X. IN WHAT AGE GROUPS DO VARIOUS TYPES OF MENTAL DISORDERS TAKE THEIR GREATEST TOLL?

1. Very few cases of psychosis occur before the age of 15. (14)
    - a. Of all first admissions in 1963 to state and county mental hospitals: (14)
        - (a) 2.6% were under 15 years of age
        - (b) 33.4% were between 15 and 34
        - (c) 42.9% were between 35 and 64
        - (d) 21.1% were 65 and older.
2. In the age range 15-44 years, schizophrenia and personality disorders predominate. (14)
3. During the next decade of life (40-50), the involutional psychoses and alcoholic psychoses attain considerable importance. (14)
4. In the sixties, psychoses with cerebral arteriosclerosis and senile psychoses assume prominence, and these mental diseases of the senium continue to rise until the end of the life span. (14)

FIRST ADMISSIONS INTO MENTAL INSTITUTIONS
IN THE FOLLOWING
AGE GROUP
PERCENTAGES - 1963



XI. WHAT IS THE COST OF CARE AND MAINTENANCE OF THE MENTALLY ILL IN PUBLIC MENTAL HOSPITALS?

Estimated total maintenance expenditures of state and county mental hospitals in 1965 were $1,201,979,234. (13)

XII. WHAT IS THE COST OF MENTAL ILLNESS TO THE VETERANS ADMINISTRATION?

Mental illnesses presently cost the Veterans Administration over $1 billion annually.

1. The estimated operating costs in fiscal 1966 for VA psychiatric hospitals was $314,284,000. This does not include the costs for care of psychiatric patients in general hospitals. (21)

   The estimated average daily patient load in VA psychiatric hospitals for fiscal 1966 was 52,470. This is 48% of the average daily patient load in all VA hospitals. (21)

2. The net operating cost in fiscal 1963 for VA outpatient mental hygiene clinics was $7,761,146. (9)
3. As of June 1965, 601,367 veterans were receiving compensation and pension payments whose major disability involved a psychiatric or neurologic condition. The annual value of these awards was $744,977,004. (15)

XIII. HOW MUCH IS BEING SPENT BY PUBLIC INSTITUTIONS FOR CARE OF THE MENTALLY RETARDED?

1. There were an estimated 188,332 resident patients in all public

institutions for mentally retarded at the end of 1965. (16) First admissions totaled 15,033 and net releases during the same period (1965) were 9,385. (16)

a. During 1965, maintenance expenditures of public institutions caring for the mentally retarded totaled $439,349,514. (16)

XIV. WHAT IS THE ESTIMATED COST OF PUBLIC ASSISTANCE TO MENTALLY ILL AND MENTALLY RETARDED PERSONS?

According to the Bureau of Public Assistance of the Social Security Administration, a 1951 study of aid to the permanently and totally disabled disclosed that 11% of the cases were mentally ill and mentally retarded persons. Assuming the estimated 1966 case load of 581,500 is similar in composition, 63,965 persons with mental illness or mental retardation receive public assistance from the Federal, state and local government amounting to $66,165,000 per year. (21)

XV. WHAT IS THE LOSS OF EARNINGS OF THOSE PEOPLE ADMITTED TO MENTAL HOSPITALS?

1. The income loss in 1964 of resident patients in State and county mental hospitals is estimated to total $1.7 billion. (19).
2. Income losses during the first year for first admissions (1964) total an estimated $424 million. (19)

XVI. IN SUMMARY, WHAT IS THE OVER-ALL ANNUAL COST OF MENTAL ILLNESS IN THE UNITED STATES TODAY?

It is estimated that mental illness costs annually approximately $5,018,497,698 as follows:

a. Total maintenance expenditures of public mental hospitals for 1965 (13)	$1,201,979,234.
b. Proprietary & non-profit voluntary mental hospitals' expenses (1964) (10)	107,829,000.
c. Estimated payments for private psychiatric care (22)	100,000,000.
d. Estimated annual cost of care of neuro-psychiatric patients in Veterans Administration hospitals and out-patient care for veterans with neuropsychiatric conditions. (9) (21)	$ 322,045,146.
e. Veterans Administration compensation & pension payments to veterans with neuropsychiatric conditions - 1965 (15)	744,977,004.
f. Expenditures of Federal agencies other than the Veterans Administration for mental patients 1964 (U.S. Public Health Service hospitals, Depts. of Defense, Justice Bureau of Prisons, Interior) (10)	36,178,000.
g. 1965 expenditures of public institutions for mentally retarded (16)	439,349,514.
h. Cost of public assistance to mentally ill and mentally retarded persons (21)	66,165,000.
i. Estimated income loss of 1964 resident patients in mental hospitals (19)	1,676,188,800.
j. Estimated earnings losses in 1964, of first admissions to mental hospitals in that one year alone (19)	423,786,000.
	$5,018,497,698.

XVII. HOW MANY PUBLIC AND PRIVATE HOSPITALS FOR MENTAL DISEASE ARE THERE IN THE UNITED STATES?

1. About 531 hospitals. The average daily hospital census of mental patients in all psychiatric hospitals, public and private, in 1964 was 695,087. (10)

   a. Of these 531 public and private psychiatric hospitals, 326 are state and local governmental mental hospitals. (10)

      73 are voluntary psychiatric hospitals
      88 are proprietary psychiatric hospitals
      44 are Federal government psychiatric hospitals (includes Veterans Administration and Public Health hospitals)

XVIII. HOW MANY PSYCHIATRIC CLINICS ARE THERE IN THE U.S.?

1. There are 2,000 psychiatric clinics in the U.S. as of the end of 1965. (7)

2. Half the clinics are located in the northeastern portion of the country which contains only 25% of the population. The south and west have fewer clinic resources than other areas of the nation. Only 4% of the clinics are located in rural areas where 30% of the population live. (7)

3. At least one clinic for every 50,000 in the population - or about 4,000 full-time clinics - are needed.

4. Because of severe mental health personnel shortages, many clinics operate at a level far below full-time capacity. 2/3 of the clinics in the country are unable to obtain the services of a full-time

psychiatrist. (7)

5. A total of 950,000 persons were treated in outpatient clinics in 1965. This is a 42% increase over the 669,000 treated in 1961, and 89% over the 502,000 treated in 1959. (7)

6. Children and young adults form an increasing percentage of the treatment load of these clinics. Between 1961 and 1963, there were the following increases in numbers of children and young adults handled: (7)

5 to 9 years	19% increase
10 to 14 years	22% increase
15 to 17 years	38% increase
18 to 19 years	38% increase
20 to 24 years	47% increase

7. In recent years, emergency walk-in clinics which offer around-the-clock services to troubled people have been opened in a number of cities, such as New York, Boston, Los Angeles, Berkeley, Detroit, etc. (7)

One of the three neighborhood centers run by the Department of Psychiatry, Albert Einstein College of Medicine, serving the psychiatric and social needs of the community.

XIX. HOW MUCH IS THE UNITED STATES PUBLIC HEALTH SERVICE SPENDING FOR ESTABLISHMENT OF MENTAL HEALTH CLINICS AND SERVICES THROUGH THE NATIONAL MENTAL HEALTH INSTITUTE?

1. $6,750,000 has been allotted in fiscal 1966 in federal matching grants to the states for the support of psychiatric clinics and related mental health services.
2. In addition, $50 million has been appropriated in fiscal 1967 for the third year of a program of grants for the construction of public and other non-profit community mental health centers.

XX. HOW MUCH IS BEING SPENT FOR RESEARCH ON MENTAL HEALTH BY THE STATES AND BY THE MAJOR FEDERAL AND NATIONAL VOLUNTARY AGENCIES INTERESTED IN MENTAL HEALTH?

1. Approximately $141.7 million is spent, as follows:

   Federal funds - $113,770,000:

   1) Nat'l Institute of Mental Health, U.S. Public Health Service, fiscal 1965:

Intra-mural research	$12,149,000	
Research grants	85,230,000	
Research fellowships	8,364,000	
Collaborative studies	3,702,000	$109,445,000 (25)

   2) Out of fiscal 1965 medical research appropriations totaling $37 million, the Veterans Administration spent for research in mental illness an estimated 4,325,000 (27)

Fiscal 1966 appropriations for medical research to the VA totaled $40.8 million, although how much will be spent specifically for research in mental illness is not known.

Total Federal Funds	$113,770,000.

Non-federal funds - $27,994,188

1) National Association for Mental Health - 1964	$ 336,014 (28)
2) The Foundations' Fund for Research in Psychiatry (New Haven, Conn.) total grant expenditures, July 1, 1964 - June 30, 1965	458,174 (29)
3) Other estimated annual research support from private national granting agencies (18)	3,200,000 (18)
4) Estimated annual state expenditures for mental health research	24,000,000 (30)
Total Non-Federal Funds	27,994,188
Total Funds	$141,764,188.

2. On the basis of 695,087 (10) patients in psychiatric hospitals in 1964, this would indicate that the amount spent for research per individual hospital case, employing Federal, State, national voluntary health agency, and other private funds, is only approximately $204.

3. In contrast to the approximate total of $141.7 million currently being spent for research against mental illness:

   a. The Nation spent $12.6 billion - OVER 93 TIMES AS MUCH - for alcoholic beverages alone in 1964 (31), an average of $66 annually for each man, woman and child. We are spending about 70¢

annually per each man, woman and child in the United States for research against mental illness.

b. Mental illness is costing the Nation over $5 billion annually. Yet our annual research investment to combat this toll is less than 3% of this cost.

XXI. HAS MEDICAL RESEARCH PAID OFF IN THE FIELD OF MENTAL ILLNESS? YES!

1. The tranquilizing drugs (reserpine, chlorpromazine) and many of the new drugs, including the psychic energizers have, over the past 10 years, revolutionized the care of state mental hospital patients and brought about an unprecedented, sustained annual reduction in state hospital populations.

At the end of 1955, there were 558,922 resident patients in state and county public mental hospitals. During that same year there were 178,000 admissions to, and 126,500 net releases from, these hospitals. (13)

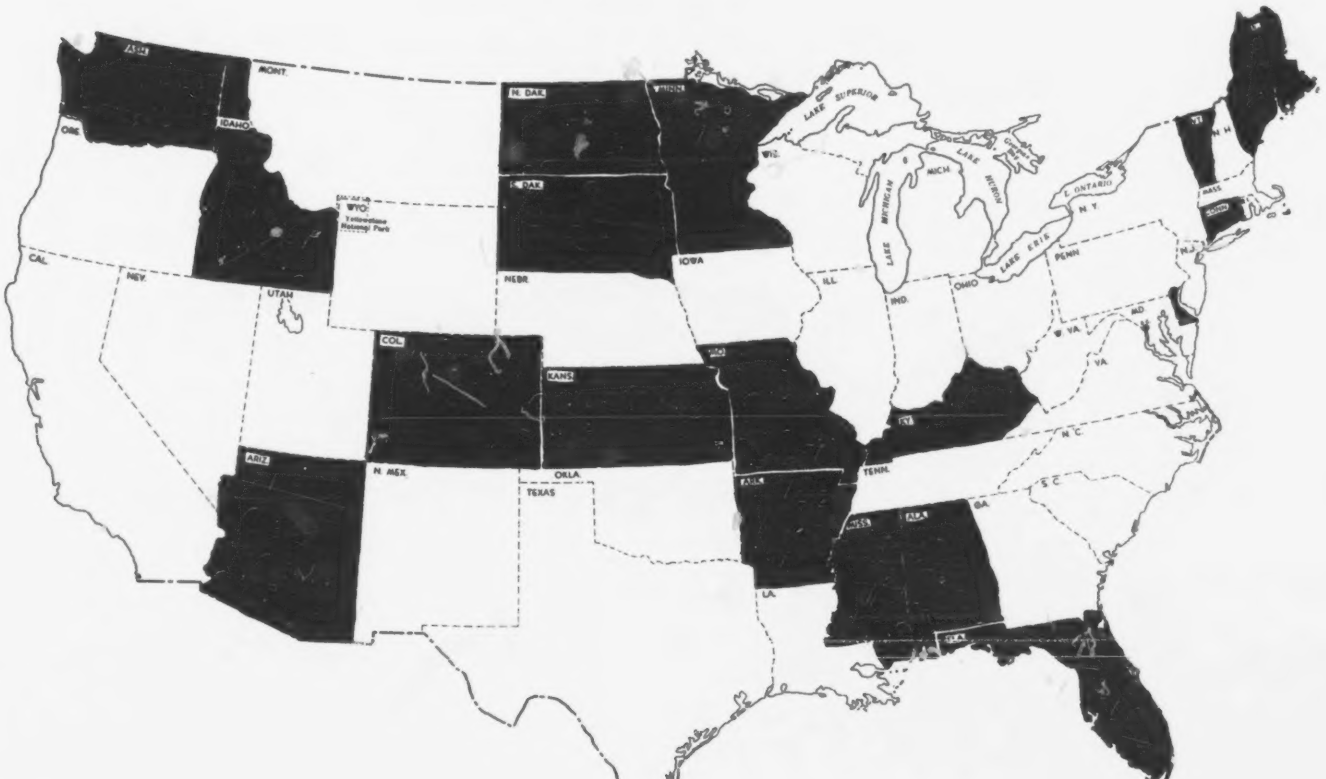
At the end of 1965, even though admissions had soared approximately 136,000 to a total of 314,443, there were 83,161 less patients in these same hospitals in 1965 as compared to 1955. (13) (Up until 1955, before the general use of the drugs, the mental hospital patient populations increased each year.)

This is a remarkable reduction of 15% in the total number of patients in these hospitals over the short span of 10 years. Even more remarkable, this downward trend in hospital populations has accelerated over the past five years, reaching a record reduction of 15,000 patients in 1965. The total drop of 52,000 patients since 1961 is more than double the average rate of drop during the preceding six years (1955-1961).

The key to this spectacular reduction is the 126% increase in number of patients released each year -- from 126,500 in 1955 to 287,000 in 1965.

This total reduction in institutionalized patients over the past 10 years is roughly equivalent to the combined mental hospital populations of 19 states: Alabama, Arizona, Arkansas, Colorado, Connecticut, Delaware, District of Columbia, Florida, Idaho,

REDUCTION IN STATE HOSPITAL POPULATION EQUIVALENT TO THE COMBINED MENTAL HOSPITAL POPULATION OF 19 STATES



Kansas, Kentucky, Maine, Mississippi, Missouri, North and South Dakota, Minnesota, Vermont, and Washington.

2. This dramatic reduction in hospitalized patients has resulted in enormous savings to the states. In the decade following the close of World War II, the over-all rise in number of patients in our state mental hospitals averaged 13,000 a year. If this trend had continued during the past 10 years, the states would have been forced to construct 130,000 additional beds. Instead of an increase, this reduction of 83,000 patients resulted in an aggregate saving of approximately 213,000 beds over the 10-year period. (32)

   Figured at the estimated cost of $20,000 a bed, this is a saving of $4.3 billion in construction costs alone! (32)

3. This steady reduction in state mental hospital populations has been achieved in spite of the fact that each year since 1955 has witnessed a record increase in admissions to these hospitals. The following are the admission figures for the past 10 years: (13)

1955 - 178,003
1956 - 185,597
1957 - 194,497
1958 - 209,823
1959 - 222,791
1960 - 234,791
1961 - 252,742
1962 - 269,854
1963 - 283,591
1964 - 302,946
1965 - 314,443

4. Of particular importance is the fact that an increasing number of states are sharing in these significant population reductions.
   In 1965, 40 states reported decreases, as against only 30 during 1959. (13)

PERCENTAGE DECLINE IN NUMBER OF PATIENTS RESIDING IN PUBLIC MENTAL HOSPITALS AT END OF YEAR EXCLUSIVE OF VETERANS ADMINISTRATION:

	Number of Resident Patients			
State	1955	1965	Decline 1955-65	Percent Decline
Iowa	5,374	2,222	3,152	58.6%
Utah	1,337	592	745	55.7%
Washington	7,361	3,851	3,510	47.6%
Colorado	5,786	3,138	2,648	45.8%
Arkansas	5,086	2,779	2,307	45.4%
Minnesota	11,449	6,592	4,857	42.4%
Oregon	4,886	2,845	2,041	41.7%
Kansas	4,420	2,622	1,798	40.7%
Idaho	1,221	740	481	39.4%
Kentucky	7,700	4,887	2,813	36.5%
Oklahoma	8,014	5,454	2,560	31.9%
Nebraska	4,826	3,398	1,428	29.5%
Massachusetts	23,302	17,253	6,049	25.9%
North Dakota	1,993	1,479	514	25.8%
Ohio	28,662	21,830	6,832	23.4%
North Carolina	12,125	9,335	2,790	23.0%
Louisiana	8,271	6,448	1,823	22.0%
Illinois	38,883	30,818	8,065	20.7%
Montana	1,919	1,518	401	20.4%
California	37,277	30,349	6,928	18.6%
New Hampshire	2,733	2,239	494	18.1%
District of Columbia	7,318	6,131	1,187	16.2%
Missouri	12,021	10,316	1,705	14.2%
Michigan	21,798	18,711	3,087	14.2%
New Jersey	22,262	19,428	2,834	12.7%
Pennsylvania	40,920	35,958	4,962	12.1%
Wisconsin	15,008	13,315	1,693	11.2%
Maryland	9,273	8,346	927	10.0%
West Virginia	5,619	5,060	559	9.9%
Rhode Island	3,442	3,114	328	9.5%
New York	96,729	87,661	9,068	9.4%
Connecticut	8,668	7,908	760	8.7%
Maine	2,996	2,768	228	7.6%

Vermont		1,294	1,207	87	6.7%
New Mexico		950	890	60	6.3%
Indiana		11,342	11,048	294	2.6%
Delaware		1,694	1,667	27	1.6%
Texas	(1959)	15,857	15,652	205	1.3%
Wyoming		655	648	7	1.1%
Arizona		1,690	1,684	6	less than 1%

PERCENTAGE INCREASE IN NUMBER OF PATIENTS RESIDING IN PUBLIC MENTAL HOSPITALS AT END OF YEAR, EXCLUSIVE OF VETERANS ADMINISTRATION:

	Number of Resident Patients			
State	1955	1965	Increase 1955-65	Percent Increase
Florida	8,026	9,992	1,966	24.5%
Nevada	440	523	83	18.9%
Alabama	7,197	7,691	494	6.9%
South Carolina	6,042	6,406	364	6.0%
South Dakota	1,603	1,648	45	2.8%
Virginia	11,303	11,544	241	2.1%
Mississippi	5,295	5,367	72	1.3%
Georgia	11,710	11,823	113	1.0%
Tennessee	7,730	7,767	37	less than 1%

Sources:
1955 Patients in Mental Institutions, Part II. Tables 1 & 2. Provisional Patient Movement and Administrative Data, State and County Mental Hospitals United States 1965. Mental Health Statistics. Current Reports, January 1965. National Institute of Mental Health, Bethesda, Maryland.

5. In some of the states where more intensive application of the drugs has occurred, patient population reductions have far exceeded the national average.

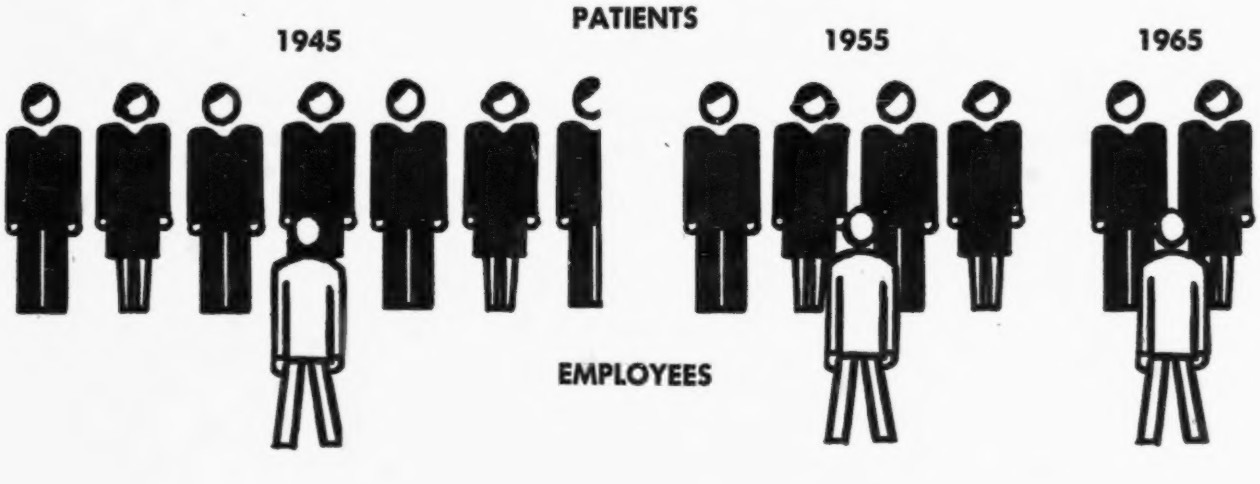
6. A recent study reported in the Archives of General Psychiatry on the use of powerful tranquilizers to help acute schizophrenia patients quickly states the following: (32)
   a. The patients in the study were young schizophrenics averaging 28 years of age, usually suffering either their first psychotic breakdown or their first hospitalization. All were judged markedly ill.
   b. In six weeks 95% of the patients on the drugs improved. The improvement in 75% of the cases was classified "marked to moderate improvement."

XXII. WHAT HAS CAUSED THIS REDUCTION IN THE NUMBER OF RESIDENT PATIENTS IN OUR STATE MENTAL HOSPITALS?

1. Extensive statistical documentation shows that increased state legislative appropriations to provide intensive treatment with tranquilizing drugs, and anti-depressant drugs, and more medical personnel to provide treatment, have now begun to pay off in dramatic fashion, and have finally achieved the cumulative force needed to reverse the seemingly inevitable annual rise in mental hospital populations:
   a. In 1945, the average daily expenditure on each resident mental patient was $1.06, ten years later (1955) it had risen slowly to

$3.06 per day. In 1965, this had risen to $6.74, more than six times the 1945 figure and a considerable increase even when the rising cost of living is taken into account, (13) although by any hospital standard a per diem expenditure of $6.74 is grossly inadequate.

b. In 1945, there was one full-time employee for every 6.8 patients in mental hospitals - an impossibly low treatment personnel-to-patient ratio. A decade later, considerable improvement was achieved when the ratio rose to approximately one employee for for every four patients (146,392 full-time employees for 558,922 patients). (7)



By 1965, a ratio of almost one full-time employee for every 2 patients was achieved (230,564 full-time employees for 475,761 patients). The biggest yearly jump occurred in 1965, when 31,000 employees were added to the staffs of state mental hospitals. Much of this significant increase in 1965 reflects the impact of the Nat'l Institute of Mental Health's Hospital Improvement Grant program - over the past 3 years,

$36 million has been awarded to mental institutions to improve their treatment potential; 80% of the funds awarded in this exciting program are being used to employ additional and new kinds of psychiatric personnel. (7)

c. However, the personnel shortage in state mental hospitals is still critical. For example, 25% of budgeted positions for staff psychiatrists remain unfilled. Many of the filled positions are held by foreign doctors - in a number of states, as high as 50% of the total physician complement is made up of foreign-born doctors.

According to a recent survey published by the Nat'l Institute of Mental Health, 21 state hospitals are without a single psychiatrist, and 91 state hospitals have only one to four psychiatrists. (8)

d. In spite of the tremendous shortages which still exist, there have been the following increases in psychiatric personnel during the past decade, largely the result of increased salaries and a great expansion of budgeted positions. They are probably the most significant evidence of how many state legislatures have given to the state mental hospitals the increased treatment potential needed to step up discharge rates: (12) (14)

Superintendents & Physicians (including psychiatrists, residents and interns)

1945 - 1,458	1963 - 5,214

Psychologists & psychometrists

1945 - 69	1963 - 1,161

Social Workers

1945 - 410 1963 - 2,659

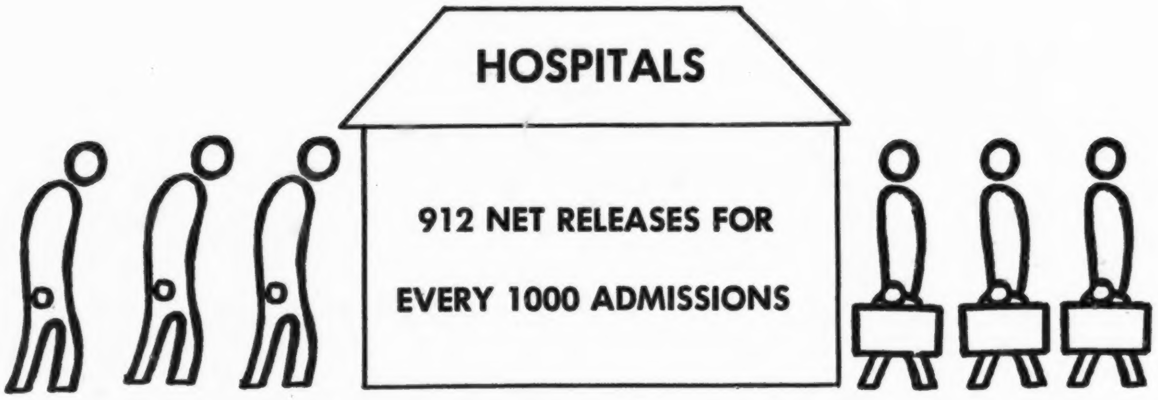
Graduate Nurses

1945 - 2,583 1963 - 10,644

Other Nurses & Attendants

1945 - 33,147 1963 - 103,109

2. All of the foregoing factors led to a steady rise in discharge rates--a rise so gradual that it was frequently obscured by the increasing flood of admissions. In 1945, the net release rate per 1,000 average resident patients was only 153; in 1965, it had almost quadrupled to a level of 592 patients discharged for every thousand still resident in the hospital. (12) (13)



An even more significant barometer of progress is the ratio of net releases to the total number of hospital admissions. In 1965, this soared to the record level of 912 net releases for every one thousand admissions. (12) (13)

XXIII. WHAT NEW LEGISLATIVE DEVELOPMENTS HOLD OUT PROMISE FOR A FURTHER REDUCTION IN OUR STATE MENTAL HOSPITAL POPULATIONS?

1. In October, 1963, the Congress passed the landmark Community Mental Health and Mental Retardation Centers bill (P. L. 88-164.) This bill provides $150 million through 1967 in federal matching money to the states for the construction, expansion or remodeling of community centers for the mentally ill. (20)

In order to qualify for this matching federal aid, each state is required to submit a construction plan describing its comprehensive blueprint for the location and priority assignment of all mental health centers in the state. Despite the extraordinary difficulty of this task, and the fact that Congress did not vote the first monies for the centers until the fall of 1964, the states responded so enthusiastically that as of July 15, 1966, federal matching grants totalling close to $60 million were awarded for the construction and/or staffing of 128 new community mental health centers in 42 states, Puerto Rico and the District of Columbia.

As a result of this first year funding, mental health services will soon be available to approximately 22 million Americans in their home communities. Assuming that states and communities apply with the same enthusiasm for the matching funds that will be available during the remaining period of the present authorization, the National Institute of Mental Health estimates that over a third of the nation's 200 million people will have access to community mental health center services by 1970.

2. In order to strengthen the state and local capability in supporting these centers, the Congress last year amended the basic 1963 act by providing a seven-year authorization of approximately $224 million in federal matching monies *in support of the personnel and other operating costs of the centers.* The federal staffing grant for any one center may not exceed 51 months, and it drops from 75 percent of total operating costs during the first 15 months to 30 percent during the last year. (23)

3. Because of the enthusiastic acceptance of the new program, combined with a widespread feeling among public officials that the unprecedented citizen demand for these centers would soon exceed available monies, the 1965 National Governors' Conference unanimously passed a resolution requesting the Council of State Governments to convene a conference "for a thorough consideration of the *future* role of each level of government in multiple-source financing of community mental health programs."

At the three-day conference, held in Chicago in December, 1965 and co-chaired by Governor Otto Kerner of Illinois and Senator A.M. Spradling of Missouri, scores of state legislators and county commissioners hammered home the point that the federal contribution to community mental health services, even with the inclusion of the 1963 and 1965 legislation, fell far below that made by most states and many local communities. Arguing for a renewal and broad expansion of the Community Mental Health Centers Act of

1963, the major resolution of the conference -- unanimously adopted by the delegates -- stated:

"Of the total annual public mental health expenditures of $2 billion in this country, only $115 million, less than four percent, is available for ongoing local community mental health services. The share of the Federal Government in this funding is less than ten percent . . . It is therefore imperative that the Federal Government, which receives the largest share of the tax dollar from our people, provide critically needed additional seed money for these programs.

"It is the consensus of the conference that the national goal of 2,000 new community mental health centers to be established by 1975, as envisioned by the landmark 1963 and 1965 Federal legislation, will not be realized without expanded Federal, State and local support."

XXIV. CAN THE AMERICAN PEOPLE AFFORD ADDITIONAL EXPENDITURES FOR MENTAL HEALTH SERVICES?

1. Proponents of additional appropriations for mental health services are frequently told that state taxes have reached a confiscatory level, and that the individual citizen is "groaning under a tax

burden which he is increasingly unable to handle."

What are the facts? How much of our personal income do we spend on state taxes?

In 1963 we spent, measured in constant dollars, 4% of our personal incomes for state taxes as against 3.7% in 1948. In other words, in a period of 15 years there was a rise of only three tenths of one percent in the portion of our individual incomes which went to state government in the form of taxes. (50)

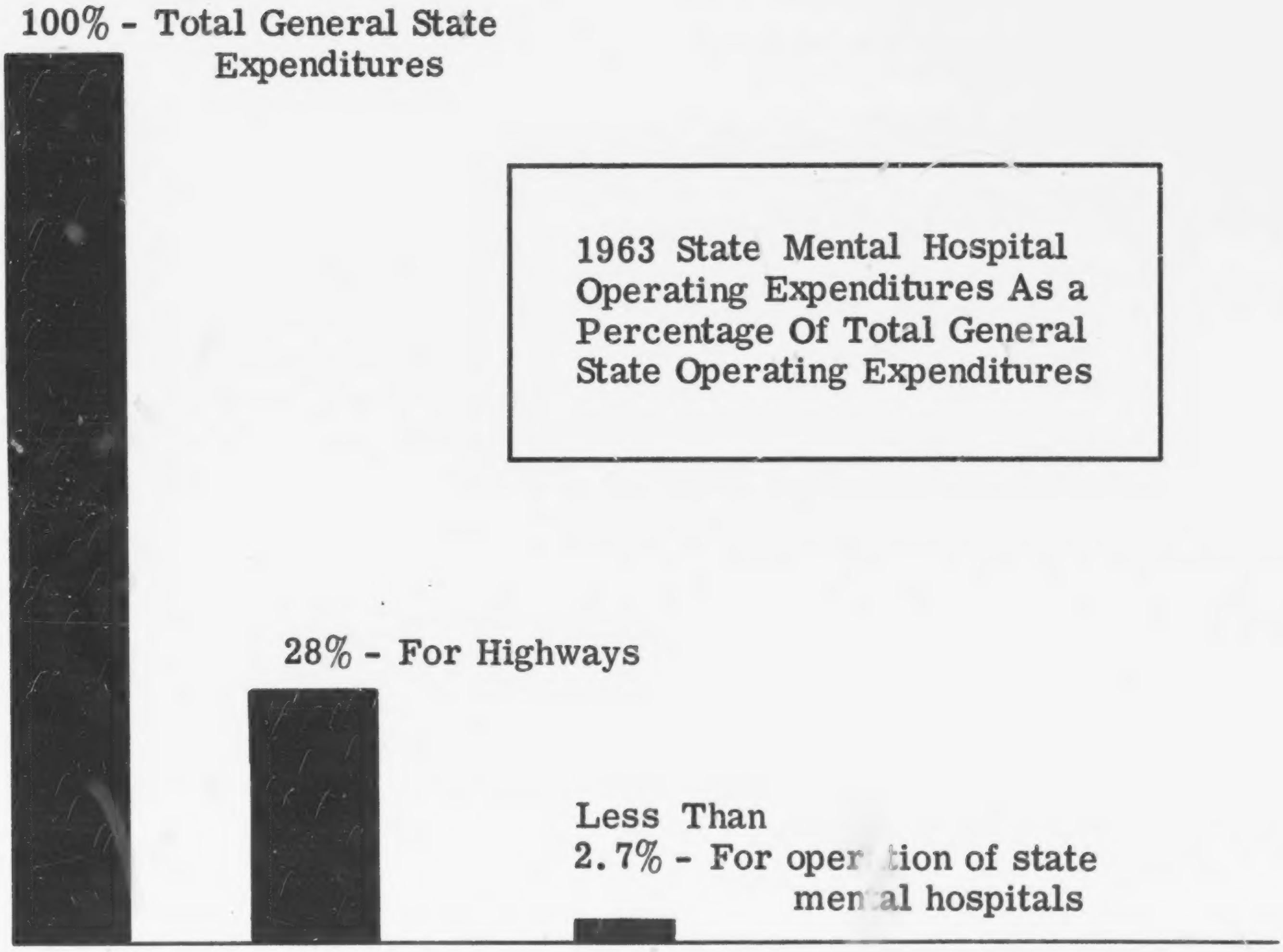
In 1964, total general state expenditures -- including federal grants and other sources of revenue -- averaged out to $195.47 per person, as compared to $115.37 in 1956. But per capita personal income increased at a record rate in that same span of time -- from $1,767 in 1956 to $2,550 in 1964. (50)

2. How about state mental hospital operating expenditures as a percentage of total general state expenditures?

Only 2.7% of general state funds went to mental hospitals in 1964, a significant drop from three and a third percent which was budgeted for these facilities in 1956. (50)

Is this a fair proportion of state expenditures? By way of contrast, state governments in 1963 devoted 28% of their funds to highways. (50)

In that year, as a nation, we spent $10 billion for highways. (50) Furthermore, the Department of Commerce recently estimated that the accelerated national highway program inaugurated in 1957 would, upon completion in 1972, cost the American people $55 billion.


1963 State Mental Hospital Operating Expenditures As a Percentage Of Total General State Operating Expenditures

When we consider the needs created by the explosive rise in our population, -- a record growth of 50 million people in the last 16 years, -- added to an unprecedented, sustained rise in individual income, we cannot but conclude that the so-called heavy burden of increased taxes for public services is an undocumented myth.

3. What about federal, state and local expenditures for community mental health services?

In 1955 -- before the big push for community services -- the per capita expenditure for clinics and other community facilities was only nine cents per year. In 1964, it had increased appreciably to 59 cents per person per year -- hardly an excessive drain on the solvency of the individual taxpayer. Furthermore, in 1965, less than four percent of the $2 billion spent by all levels of government for mental health expenditures was budgeted for community mental health services. (50)

XXV. WHAT ARE WE SPENDING OUR MONEY ON THESE DAYS?

In 1964, we spent for:

Recreation - $22.7 billion (11)
Alcoholic Beverages - $12.6 billion (31)
Tobacco Products - $7 billion (31)
Foreign travel and remittances - $3.5 billion (11)

We also managed in that same affluent year to spend $359 million for chewing gum! (31) This compares with a total of approximately $141.7 million spent by all sources -- federal, state and local governments, voluntary health organizations and private foundations -- for psychiatric research to get Americans out of state mental hospitals which are mostly "human warehouses". (51)

XXVI. WHAT ROLE WILL THE PSYCHIATRIC UNIT IN THE GENERAL HOSPITAL PLAY IN THE EXPANSION OF EARLY, INTENSIVE TREATMENT SERVICES DURING THE YEARS AHEAD?

1. Over the past few years, the general hospital has assumed a tremendously increased role in the care of mental patients. A

1964 AVERAGE DAILY COST* PER RESIDENT PATIENT IN PUBLIC MENTAL INSTITUTIONS, VETERANS, PROPRIETARY PSYCHIATRIC AND SHORT-TERM GENERAL OR SPECIAL HOSPITALS.

NON-FEDERAL GENERAL & SPECIAL SHORT-TERM HOSPITALS
$41.58 *

PRIVATE PSYCHIATRIC HOSPITALS
$21.99 *

VETERANS PSYCHIATRIC HOSPITALS
$15.47 *

STATE MENTAL INSTITUTIONS 1965
$6.74 *

* Cost to hospital of patient maintenance

recently completed nationwide survey reveals that general hospitals treated and discharged almost 600,000 psychiatric patients in the 12-month reporting period ending in April, 1965. This represents a 40 percent increase in psychiatric services rendered by general hospitals during the past decade. The survey also highlights the fact that the public mental hospital is no longer the major locus for in-patient treatment of mental illness -- in 1965, general hospitals discharged more than twice as many mental patients as did state and county mental hospitals. (26)

2. There are 3,183 general hospitals that now admit psychiatric patients. Of this total, 1,046 either have separate psychiatric units or regularly and routinely treat psychiatric patients on the general wards of the hospital. The other 2,137 hospitals admit mentally ill patients on an emergency basis for diagnosis, treatment or for retention pending admission to other facilities. (26)

3. The 467 general hospitals which maintain separate psychiatric units are by far the most active in terms of patients treated. In the 1964-65 reporting year, they accounted for 54 percent of all discharges from general hospitals (321,144) and for 81 percent of all psychotic discharges (72,079). (26)

4. Under the impetus of the 1963 and 1965 Community Mental Health Center legislation, the general hospital of the future will become an even more important community resource. More than 50 per-

cent of the new community mental health centers being constructed with federal aid have a general hospital psychiatric unit as the key facility.

5. The average length of stay of a patient in the psychiatric unit of a general hospital varies from 23 to 33 days in such representative cities as Sacramento, Louisville, Hartford, Ann Arbor, Philadelphia, Chicago, New York, Dallas and Washington, D.C. (24)

   In Illinois, the average stay in psychiatric units in general hospitals is 16 days. Although the per diem cost of some of these units has run as high as $35 per patient, the total cost per patient has been approximately 50% of the total cost per patient treated in the state mental hospitals in Illinois. (24)

6. A number of states and cities are subsidizing psychiatric beds in general hospitals for patients unable to afford them. Since 1960, Georgia has supported psychiatric units in general hospitals in its major cities. Although the daily cost to the state has been high -- $30 to $35 - the approximate cost per patient treated has been only about $1,000, considerably less than the cost of long-term treatment in the 12,000 bed state hospital at Milledgeville. (32)

   More than half of the states which have passed Community Mental Health Services laws over the past decade, providing state and local matching monies for these services, use a percentage of the funds for the support of psychiatric beds in general hospitals. (32)

7. Part-time hospitalization through the use of either day or night hospitals has increased remarkably over the past decade. 175 day-night hospital programs in operation in all parts of the land. (26)

XXVII. WHAT ARE WE DOING TO INCREASE THE PSYCHIATRIC SKILLS OF THE GENERAL PRACTITIONER AND THE NON-PSYCHIATRIC SPECIALIST?

1. In 1958, Congress allocated the first monies for a national program devoted to training the general practitioner in psychiatric skills. The program was divided into two parts: (34)

   a. Provision of stipends at a level sufficient to permit non-psychiatric physicians to give up their practice and undertake three years of residency training with the objective of becoming full-time psychiatrists.

   In fiscal 1959, the first year of the program, 94 non-psychiatric physicians were enrolled in this program. In the current year, 676 physicians are in residency training programs leading to certification as psychiatrists.

   Since the inception of the program, 800 fully qualified psychiatrists have been added to the manpower pool. They are serving in many facilities which have been critically short of psychiatrists for years; for example, a significant percentage are directing mental health clinics which now, for the first time, have acquired psychiatric leadership for their programs. However, this number is still inadequate for the needs.

b. Grants to institutions qualified to offer postgraduate courses designed to enable the general practitioner, internist, pediatrician or other non-psychiatric specialist to function more effectively in a therapeutic, referral or preventive role in dealing with problems of mental illness.

Since the inauguration of this program, close to 10,000 physicians have been reached in formal courses, and many additional thousands have attended refresher courses sponsored by local and state medical societies and by university medical centers. Physicians taking these postgraduate courses receive no stipend whatsoever for the period of training -- the individual grants cover only the faculty costs of the training institutions. Physicians enrolled in these programs range in age from 23 years to 93 years, with a median age of 46.

2. In fiscal year 1961, a third type of training was offered under this program. Intensive, full-time psychiatric training for periods of not less than six months nor more than one year was offered to non-psychiatric physicians, residents and interns who intend to

practice, or continue practicing, in a field other than psychiatry. In the first five years of this program, 242 special residency stipends were awarded for training at 55 different institutions. (34)

3. In the eight years since the activation of the General Practioner Training Program, (fiscal 1959 through 1966) the Congress has appropriated $51 million for the three basic training programs. For the fiscal year beginning July 1, 1966, President Johnson has recommended $11 million for a continuation of this highly successful effort. (34)

4. In addition to the federal program, many of the country's leading medical organizations are intensifying their activities in training the general practitioner in psychiatric skills.

Since 1957, the American Psychiatric Association has had a full-time psychiatrist heading its General Practitioner Education Project. The APA, in conjunction with the Western Interstate Commission on Higher Education, The Southern Regional Education Board and a number of national medical organizations, has sponsored a series of regional seminars for general practitioners.

In addition, the director of its GP project travels across the country each year speaking to many state and local medical associations and academies of general practice. The APA also publishes a newsletter covering developments in this field. (37)

The American Academy of General Practice gives official credit to those of its members who take approved postgraduate courses in psychiatry. (37)

As a result of all of these efforts, more postgraduate courses are now offered in psychiatry than in any other medical specialty. The August 11, 1965 issue of "The Journal of the American Medical Association" noted that 253 formal postgraduate courses in psychiatry were conducted in 1965, as against 114 only three years ago.

XXVIII. WHAT ARE THE STATES AND LOCALITIES SPENDING ON COMMUNITY MENTAL HEALTH SERVICES?

1. In 1965, state and local governments spent approximately $115 million for community mental health services. (4)

   This compares with $6 million spent by state and local governments for these services in 1952, and $37 million in 1959.

2. As of December, 1965 twenty-six states had enacted legislation which provides matching money on a formula basis to local governments for the provision of community mental health services. (4)

   These twenty-six states are:

   California (1957)
   Colorado (1963
   Connecticut (1955)
   Idaho (1965)
   Illinois (1961)
   Indiana (1955)
   Kentucky (1964)
   Louisiana (1964)
   Maine (1959)
   Maryland (1966)
   Michigan (1963)
   Minnesota (1957)
   Nevada (1965)
   New Hampshire (1965)
   New Jersey (1957)
   New York (1954)
   North Carolina (1963)
   North Dakota (1965)
   Oregon (1961)
   Rhode Island (1962)
   South Carolina (1961)
   Texas (1965)
   Utah (1961)
   Vermont (1957)
   Wisconsin (1959)
   Wyoming (1961)

3. The typical state matching provision is 50 percent of eligible expenditures, but several states have moved up to 75 percent matching for augmented services or for areas with low incomes. Only seven states have per capita limitations (50 cents per capita is typical) on state expenditures. (4)

   Typical eligible expenditures include operating costs for out-patient, consultation, prevention, information and education and rehabilitation services, with at least ten states also sharing in the support of in-patient services in general hospitals. (4)

   Heretofore, the Acts have usually specifically excluded capital outlay as an eligible expenditure. However, following the passage of the federal Community Mental Health Centers Act in 1963, several states have begun to reconsider this item. For example, New York has already amended its program by authorizing State participation of one-third the total cost of community mental health facility construction. (4)

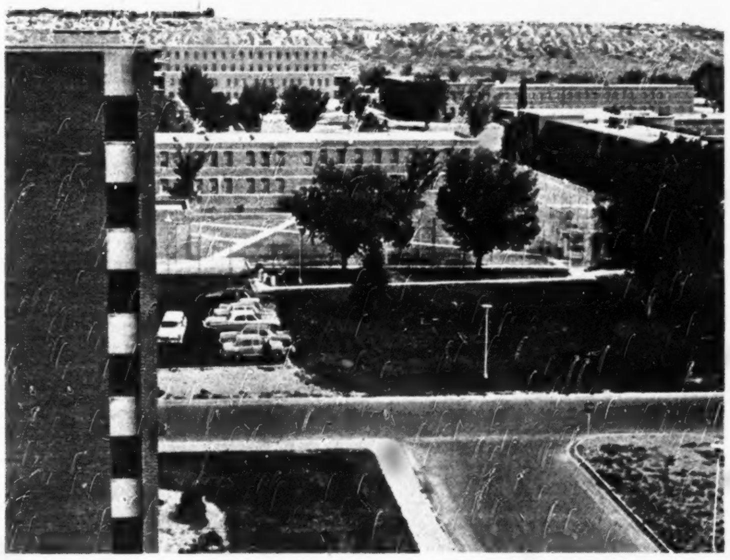
4. Even before the enactment of the federal legislation, a number of states had pioneered in the opening of comprehensive centers designed to provide early, intensive treatment on a flexible basis.
   a. As a result of the passage of a bond issue in 1961, Illinois will eventually have six small regional centers covering designated mental health zones in various parts of the state. All of the centers will have inpatient facilities in addition to a host of additional community services.

b. In 1962, Colorado opened a 125-bed comprehensive mental health center near Denver. During the past two years, it has added separate geriatric and children's units. The Fort Logan Center provides day and night hospitalization, outpatient services, a half-way house and psychiatric home-treatment teams which work out of regional clinics set up in the city of Denver. (6)

Although it takes patients from a population area of close to a million people, it hospitalizes only a small proportion of those it screens. For example, as of July 31, 1963, there were 399 patients in its Psychiatric Division, distributed as follows: (6)

24-hour	69	Halfway House	6
Day Hospital	173	Follow-up	93
Night Hospital	20	Family Care	38

The scale of fees at the Fort Logan Mental Health Center indicates how considerable the savings can be through a reduction in



The State Hospital at Pueblo, Colorado.

The Fort Logan Mental Health Center near Denver expensive, 24-hours hospitalization. For example, the average cost per day for inpatient care is about $20. For day patient care, it is only $8, and for outpatient follow-up care it is $8 per week. (6)

c. The Massachusetts Mental Health Center in Boston, the oldest community mental health center in the country, has approximately 150 beds. With a full-time staff of 14 psychiatrists, plus 59 psychiatric residents and a number of Harvard medical students on rotation, it handles 4,000 patients a year. It operates a 24-hour hospital, day and night hospitals, and an emergency walk-in clinic which alone handled more than 2,000 patients in 1963. (32)

d. The Boston State Hospital operates a home-treatment service for the Dorchester area, which has 180,000 residents. Working out of the state hospital, the psychiatric team collaborates closely with family physicians in visiting homes and preventing hospitalization. The Boston State Hospital also runs five day-hospitals and a half-way house for patients about to be discharged to the community. (32)

XXIX. WHAT PERCENTAGE OF THE STATES' MENTAL HEALTH BUDGETS IS BEING DEVOTED TO RESEARCH IN MENTAL ILLNESS?

While the States were spending in 1965 over $1 billion 201 million in total maintenance expenditures for patients in public non-federal mental hospitals (13), they were spending only about 1.9% of this amount for research in mental illness.

XXX. HOW MUCH DOES THE COUNCIL OF STATE GOVERNMENTS RECOMMEND THE STATES SHOULD SPEND FOR RESEARCH & TRAINING?

1. It was the general consensus of the National Governors' Conference on Mental Health held in Detroit, Michigan, in February 1954, that 10% of each state's mental health budget should be allocated for research and training.
2. The average percentage of the States' total mental health budget which the state mental health officials feel should be devoted to research is 4% - some even suggest 7%. (40)

XXXI. DO THE PATIENTS IN STATE MENTAL HOSPITALS RECEIVE ADEQUATE CARE?

1. NO. In 1965, the maintenance expenditure in public non-federal mental hospitals in the United States per resident patient was only $2,461.05 per year (13), or $6.74 per day. In the same year, Alaska was high with $23.02 per day. Mississippi was low with only about $3.18 per day. (13)

a. In contrast, the average expense per patient day in Veterans Administration psychiatric hospitals was $15.47 in 1964, and the total expenses per patient day in proprietary mental hospitals was $21.99 in the same year. (10)

b. In 1964, the expenses per patient day in non-federal short-term general and other special hospitals in the United States, where research and surgery have brought new treatments and cure for patients, were $41.58. (10) This contrasts with $6.74 per day per capita maintenance expenditure in public mental hospitals in 1965. (13)

(a) The average length of stay in short-term general and special hospitals in 1964 was 7.6 days (10)

XXXII. WHAT ARE THE STANDARDS FOR CARE OF MENTAL PATIENTS?

1. The latest approved American Psychiatric Association minimum standards for care are: (41)
    - a. For clinical psychologists: admission and intensive treatment service, 1 clinical psychologist to each 100 patients; continued treatment service, 1 - 500 patients.
    - b. For physicians: admission and intensive treatment service, 1 physician to each 30 patients; continued treatment service, 1 - 150 patients; geriatric service, 1 - 150 patients.
    - c. For registered nurses: admission and intensive treatment service, 1 registered nurse to each 5 patients; continued treatment service, 1 - 40 patients; geriatric service, 1 - 20 patients.
    - d. For attendants: admission and intensive treatment service, 1 attendant to each 4 patients; continued treatment service, 1 - 6 patients; geriatric service, 1 - 4 patients. ("Attendants" means practical nurses, barbers, beauticians, domestics, orderlies, janitors and mess attendants.)

XXXIII. WHAT ARE THE ACTUAL CONDITIONS OF CARE IN MENTAL HOSPITALS COMPARED WITH APPROVED STANDARDS?

1. The actual average ratio in state mental hospitals in 1964 was one physician for each 103 patients; one professional staff member (includes physicians, psychologists, psychometrists, psychiatric and other social workers, registered nurses, occupational and other therapists) for each 20 patients; and one full-time employee (includes attendants, maintenance employees, kitchen employees as well as medical record librarians, teachers, business office employees, dentists) for each 3 patients. (50)

XXXIV. HOW MANY DOCTORS AND OTHER MEDICAL PERSONNEL SPECIALIZE IN THE CARE OF MENTAL PATIENTS?

1. In 1965 there were approximately 14,200 psychiatrists in the United States who were members of the American Psychiatric Association. Of these, about 600 (4%) are administrators, superintendents or commissioners (some of these undoubtedly practice part time). (44)

2. In 1965, there were 8,468 diplomates of the American Board of Psychiatry and Neurology. Of these: (45)

   6,802 were certified in psychiatry only
   674 were certified in neurology only
   992 were certified in psychiatry and neurology both
   8,468

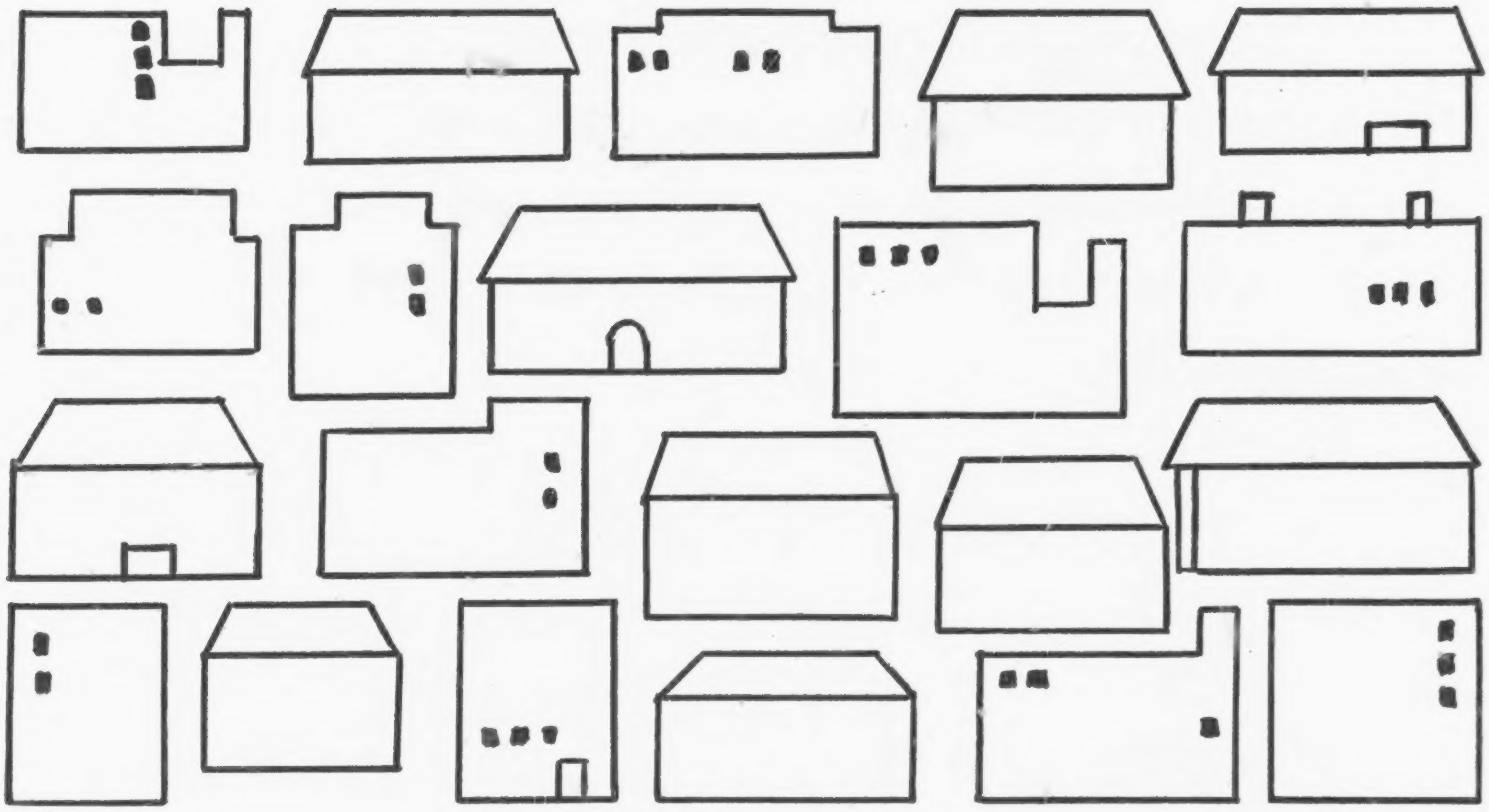
3. There were approximately 10,644 graduate nurses employed full-

time in public mental hospitals in the United States in 1963 (14); 103,109 other nurses and attendants (14). An estimated 7,500 social workers were employed in mental health hospitals, clinics and institutions in 1963 (46); however, only 2,048 were employed full-time in public mental hospitals (14)

4. There were 1,734 members of the American Psychological Association who are diplomates of the American Board of Examiners in Professional Psychology in 1965. This is the highest rating obtainable in psychology, and the number includes persons who have specialized in clinical, counseling, or industrial psychology. The 1965 membership of the American Psychological Association is 23,561; anticipated 1966 membership, roughly 24,500. (47)

XXXV. WHAT ARE THE SHORTAGES IN PSYCHIATRIC PERSONNEL?

1. It is conservatively estimated that we need an additional 10,000 psychiatrists to fill present and projected positions in state mental hospitals, general hospitals, clinics and community mental health centers. (17)
   a. About one in every four budgeted positions for staff psychiatrists is unfilled in Veterans Administration hospitals and in state hospitals for the mentally ill and the mentally retarded. (33)
   b. According to a recent survey published by the National Institute of Mental Health, 21 state hospitals are without a single



21 STATE HOSPITALS WITHOUT A SINGLE PSYCHIATRIST

psychiatrist, and 91 state hospitals have only one to four psychiatrists. (35)

c. Many of the filled positions are held by foreign born physicians. Nationally, approximately 40 percent of the psychiatrists and psychiatric residents working in state hospitals come from other countries and, in a number of states, more than half of the total psychiatric complement is made up of foreign born physicians. (35)

2. The shortage of clinical psychologists is equally grave. The most recent figures provided by the American Psychological Association Placement Office show that, in 1963, there were seven positions offered for every three applicants. (36)

3. One out of every four budgeted positions for professional registered

nurses in state mental hospitals and institutions for the mentally retarded was unfilled as of September 30, 1963. (38)

4. The ratio of mental health professionals to patients in state mental hospitals in 1964 falls far below the minimum personnel standards recommended by the American Psychiatric Association, as illustrated in the following table: (39)

No.		Ratio		American Psychiatric Association Recommended Minimum Standards		
		Average Daily Resident Pts.	Pts. under Treatment	Admission & Intensive Treatment Service	Continued Treatment Service	Geriatric Service
4096	All physicians including psychiatrists	110:1	180:1	30:1	150:1	150:1
1086	Psychologists and Psychometrists	416:1	678:1	100:1	500:1	(None)
				(The APA Standards relate only to clinical psychologists)		
10,089	Registered Nurses	45:1	73:1	5:1	40:1	20:1
1787	Psychiatric social workers	253:1	412:1	APA standards state: "One to 80 new admissions per year. One to 60 patients on convalescent status or on family care. One supervisor to every 5 case workers."		

XXXVI. ARE WE MAKING ANY HEADWAY IN REDUCING SHORTAGES OF PSYCHIATRIC PERSONNEL? YES!

1. In 1965, the number of psychiatrists, psychologists, social workers

and psychiatric nurses working in the field of mental health totaled about 65,000 as compared to 23,000 only fifteen years ago. (36)

2. The National Institute of Mental Health has played the major role in this dramatic expansion of psychiatric personnel. From 1948 to 1965, the annual number of NIMH training stipends rose from 219 to over 9,000. In this span of time, the Institute provided training for approximately 30,000 individuals in the four core disciplines in the mental health field. (36)

3. In 1963, approximately 11% of all medical specialty residencies were in the field of psychiatry, as against only 6% in 1950. Furthermore, psychiatrists in 1963 comprised 7% of all medical specialists, as against 3% of all medical specialists in 1953. (42)

4. Despite these remarkable increases, the burgeoning demand for mental health services has required personnel in the mental health field to divide their working hours among a number of facilities. For example, a 1963 survey covering outpatient clinics, public and private hospitals for the mentally ill and public and private institutions for the retarded noted that 30% of the psychiatrists and 16% of the psychologists were providing services in more than one institution. Even more striking were the number of professionals in outpatient clinics who had multiple employment – 46% of the psychiatrists, 23% of the psychologists, 22% of the nurses and 13% of the social workers. (43)

5. It is estimated we will need between 120,000 and 125,000 professionals in the four core disciplines by 1975 to overcome existing shortages and to meet anticipated demands generated by the new community mental health centers, the Medicare legislation, expanded psychiatric benefits for workers achieved through the bargaining process, the rapid growth of psychiatric units in general hospitals, etc. (36)

An adolescent patient is interviewed at the Philadelphia Psychiatric Center.

XXXVII. ARE WE MAKING PROGRESS TOWARD FULLER HEALTH INSURANCE COVERAGE OF MENTAL ILLNESS?

1. Under increasing pressure from subscribers, from public officials at the federal and state level, and from labor's increasing militancy at the bargaining table, the commercial insurance companies and Blue Cross-Blue Shield are slowly increasing their coverage of mental illness.

However, a comprehensive 1965 Blue Cross Association study of the economic aspects of mental illness, while noting appreciable improvement in coverage of psychiatric illness by its member plans, is frank to admit that insurance benefits for mental illness are still far more limited than for physical illness. Quoting from the Blue Cross report:

> "Restrictions on these benefits are common and among those covered for mental illness the proportion with full coverage (the same benefits as any other illness) was somewhat less than one-third of those covered."

2. The commercial and non-profit insurance companies, while more willing to cover full, 24-hour hospitalization of mental patients, are quite resistant to efforts to get them to cover partial hospitalization and out-patient treatment in community facilities and in the doctors' office. (6)

The 24-hour bed is no longer a venerated receptacle for the mental patient. In fact, there is an increasing recognition that continuous hospitalization is frequently an anti-treatment device, making it all the more difficult for the mental patient to resume his duties in society. (6)

Day hospital coverage is much more economical for the insurance companies. For example, in January of 1964, Colorado Blue Cross began covering 30 days of day hospital care at the Colorado General Hospital. Figures on the first year of coverage show an average treatment period of 12 days, at a cost of $18 per day. This day care cost compares with $34 per day for 24-hour hospital treatment at Colorado General. At the Fort Logan Mental Health Center in Denver – a public facility – inpatient care is $20 per day, while day hospitalization is only $8 per day. (6)

3. The importance of adequate insurance coverage of mental illness, particularly for short term community-based care, was heavily stressed in President Kennedy's historic 1963 message on mental illness and mental retardation when he told the Congress:

> "Mental health services should be financed in the same way as other medical and hospital costs. At one time, this was not feasible in the case of mental illness, where prognosis almost invariably called for long and often permanent courses of treatment. But tranquilizers and new therapeutic methods now permit mental illness to be treated successfully within relatively short periods of time – weeks or months, rather than years."

President Kennedy directed the Department of Health, Education and Welfare to set up a task force on insurance to meet with the major carriers and develop a minimum set of standards for psychiatric insurance. Late in 1964, the Task Force on Insurance released a set of principles designed to promote broader coverage of mental illness. The major principles are:

a. Emphasis should be placed on early referral and short-term intensive therapy. With regard to out-patient benefits, this would indicate low deductible features and low co-insurance to encourage early care.

b. In-hospital benefits should be increased and partial hospitalization should be included in all benefits. Included within the definition of "allowable hospital expenses" should be those incurred within day and night hospital programs.

c. Increased coverage should be given to all the professional skills essential to treatment and rehabilitation of the mentally ill –

not only psychiatrists and other doctors, but clinical psychologists, psychiatric social workers, psychiatric nurses, etc.

d. Comparable coverage should be provided for *all* accepted types of treatment. The objective should be continuity of care, so that the patient receives the most appropriate treatment at each stage of his illness. When deemed necessary, treatment visits by members of the patient's family (collateral visits) should be covered in addition to the patient's visits.

e. *Prescribed drugs* should be covered for *ambulatory* as well as for hospitalized patients. *Drugs are a vital resource* for the treatment of mental illness, whether the patient is ambulatory or hospitalized; moreover, drugs may be the very factor keeping some patients ambulatory instead of having to be hospitalized.

XXXVIII. WHAT ARE SOME OF THE BREAKTHROUGHS IN RECENT YEARS IN INCREASED COVERAGE OF PSYCHIATRIC ILLNESS? (48)

1. The Federal Employees Health Benefits Program, enacted by the Congress in 1959, covers more than two million federal employees and their four million family members for both basic psychiatric hospitalization and, under an optional major medical plan, for out-patient care including a limited number of visits to a private psychiatrist. A survey of the first three years experience with the plan reports one annual admission for psychiatric illness for every 500 members, and an average hospital stay of only 11 days per admission. This is much less than the admission rate for most other illnesses — for example, there are ten times as many admissions under the federal plan for respiratory diseases.

2. Retail Clerks Local 770 of Los Angeles has pioneered in providing psychiatric services for its members since 1960. The employers contribute two and a half cents an hour in fringe benefits for the psychiatric program. This generates about $600,000 a year and, for this amount of money, the Southern California Permanente Medical Group provides psychiatric hospitalization and unlimited out-patient care. Any clerk or his dependent can, in the course of a year, come in for any kind of program: a long, chronic problem, an educational program, a problem concerning the speech difficulty of a child, parent-child guidance, diagnostic evaluation, marital and pre-marital counselling - in other words, the whole

4

spectrum of psychiatric services as we know them today.

Only a small number of retail clerks – one for every thousand eligible members – is hospitalized; the median hospital stay is less than 20 days. Family therapy accounts for the bulk of the case load -- at present, about 40 percent of the total service provided.

MANY MILLIONS OF WORKERS ARE COVERED FOR PSYCHIATRIC ILLNESSES UNDER EMPLOYEE INSURANCE PLANS

3. The biggest breakthrough in coverage of psychiatric illness for workers was the landmark United Auto Workers Contract of 1964, covering two and a half million workers and their dependents in 77 major American cities. The plan, which went into effect on September 1, 1966, not only provides generous inpatient benefits,

but it allows each worker $400 per year in out-patient benefits. Its emphasis upon out-patient treatment either in the doctor's office or in day hospitals, community mental health centers and clinics; its coverage of drugs dispensed by a hospital or community mental health facility; its use of group psychotherapy and family counselling, and its coverage of services, including psychological testing, provided by various members of the mental health team embody the most enlightened principles of progressive psychiatric coverage.

Furthermore, and this may be its most important contribution, it encourages the worker to seek treatment by providing the first five visits for therapy at no cost, and then slowly increasing the co-insurance contribution over the duration of the period of treatment. This is the obverse of most existing plans, which insist upon a high deductible and heavy early co-insurance to deter utilization.

Dr. Daniel Blain, President of the American Psychiatric Association, when the UAW contract was negotiated, and now an active participant in its implementation, recently hailed the UAW plan as establishing "a prototype which, if emulated in future bargaining contracts throughout American industry will, for the first time in history, make adequate psychiatric care available to millions of Americans who have been deprived of it."

XXXIX. HOW DOES THE 1965 MEDICARE LEGISLATION INCREASE BENEFITS FOR THOSE OVER 65 AND FOR MEDICAL INDIGENTS GENERALLY? (49)

1. Under the basic Social Security provision (Part A of Title 18), persons over 65 with a diagnosed mental illness are entitled to up to 90 days of care in a general hospital or community mental health center for each spell of illness, with the patient paying a $40 deductible for the first 60 days, plus $10 a day for the 61st and subsequent days. The mental patient is also entitled to up to 100 days of post-hospital extended care per duration of illness in a nursing home, or other facility which is not primarily for mental patients. He is also entitled to 100 home visits by health workers representing agencies not primarily engaged in the treatment of mental illness.

   If the patient is placed in a public or private institution solely engaged in the treatment of mental patients, there is a lifetime limit of 190 days on such coverage.

2. Under the voluntary section of the Medicare legislation (Part B of Title 18), the individual who elects to enter the plan pays $3 a month and the federal government matches this sum. Subject to a $50 deductible, the plan covers 80 percent of the patient's bill for physicians' services in and out of the hospital, home health services, drugs, diagnostic tests, etc. The only restriction on

psychiatric benefits relates to out-patient care – during any calendar year, the limit is $250 or 50 percent of the expenses, whichever is smaller.

3. Under the revised Kerr-Mills program, as outlined in Title 19 of the Medicare legislation, medical services are extended to include larger categories of the medically indigent (as opposed to aged on public assistance rolls); dependent children ; and relatives responsible for their care, under the Aid to Families of Dependent Children; the permanently and totally disabled, the blind, etc.

   With regard to mental illness, state plans which qualify for increased federal matching monies may include psychiatric in-patient services in a public or private mental institution for patients over 65 years of age, and in a general hospital for those patients who are under 65. After July 1, 1967, states planning to qualify for matching monies must provide a minimum medical assistance program also including outpatient hospital services, laboratory and X-ray services, skilled nursing home services and physicians' services regardless of where they are provided. On an optional basis, states may provide a broad range of additional services such as prescribed drugs, dental services, eyeglasses, etc.

4. Under another section of the Medicare legislation, covering public assistance recipients, federal funds to the states are authorized for the first time to share in meeting the costs of patients over 65 years

of age in mental institutions. This provision, which went into effect on January 1, 1966, will give the states an estimated $75 million a year in additional monies for the care of aged patients. However, in order to qualify for these funds, states must submit evidence that this additional money is being used for improved services.

Patients on public assistance under 65 years of age in general hospitals who have a diagnosis of mental illness are now eligible – again for the first time – for federal matching payments. However, states wishing to qualify for this additional federal money must submit plans, including provisions designed to insure the best possible care for each mental patient covered. The state plan must stress alternatives to institutional care, with particular emphasis upon the development of community mental health center treatment facilities for these individuals.

5. During the first year of implementation of the Medicare legislation, it is estimated that about $200 million in additional federal monies will be provided for better treatment of the mentally ill. This figure does not include the large sums which will go into the Health Insurance Trust Fund for coverage of psychiatric hospitalization under Part A of Title 18, nor does it include the additional state expenditures required as matching funds for expanded coverage of the medically indigent and recipients of public assistance who require psychiatric care.

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Assuming 52% of first admissions in 1964 to public mental hospitals had been able to be employed and each earned the $6,600 median family income for that year, some 64,210 could have earned in that one year $423,786,000 in income.

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CREDITS

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WHAT ARE THE FACTS ABOUT RETARDATION?

WHAT ARE THE FACTS ABOUT
MENTAL RETARDATION
IN THE UNITED STATES TODAY?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

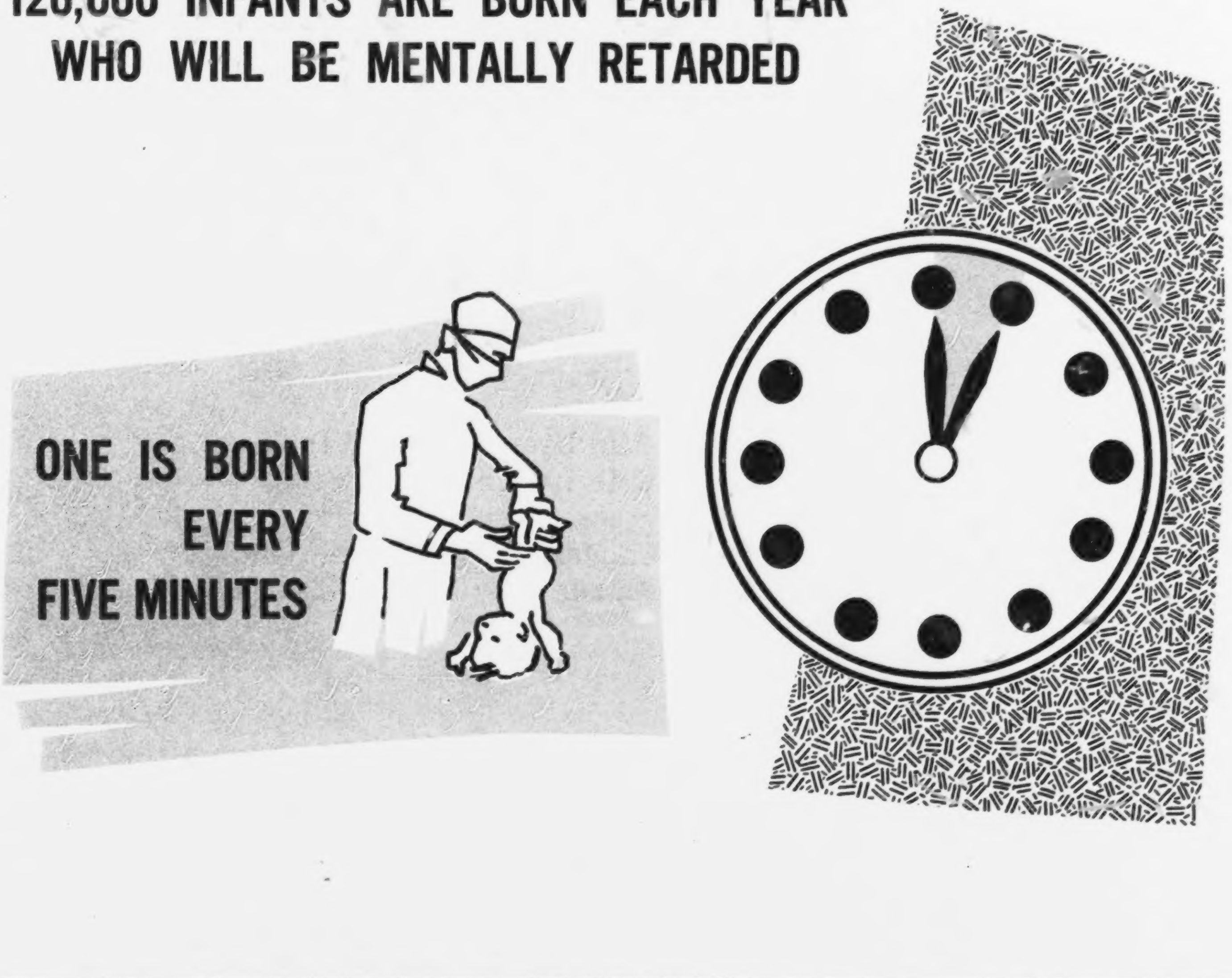
1966

WHAT ARE THE FACTS ABOUT MENTAL RETARDATION IN THE UNITED STATES TODAY?

I. HOW MANY PEOPLE ARE MENTALLY RETARDED IN THE UNITED STATES TODAY?

1. An estimated 6 million Americans are mentally retarded.
2. Every year, over 120,000 babies are born who will not achieve an intelligence equal to that of a child of 12.
3. Three out of every 100 children born are destined to be mentally retarded.
4. Mental retardation is the major cause of disability in young adults between the ages of 21 and 35 receiving assistance under the Federal program for Aid to the Permanent and Totally Disabled.

126,000 INFANTS ARE BORN EACH YEAR WHO WILL BE MENTALLY RETARDED



THEY AND THEIR FAMILIES ADD UP TO 30 MILLION PEOPLE

II. IN WHAT AGE GROUPS ARE MOST MENTALLY RETARDED TO BE FOUND?

1. A breakdown by age of the 6 million mentally retarded is as follows:

From birth to five years of age	605,000
From six to sixteen years of age	1,354,000
From 16 to 21 years of age	691,000
Total under 21 years old	2,880,000
Total over 21 years old	3,100,000
	6,000,000
(rounded figures)	

III. WHAT ARE THE CAUSES OF MENTAL RETARDATION?

In general more than 100 causes are known; others are suspected, but many causes remain unknown. Mental retardation results when there is

1. Incomplete development or destruction of tissues of the central nervous system
2. No brain development before birth.
3. Over-exposure to X-rays
4. Certain illnesses, infections and glandular disorders during pregnancy
5. Extraordinarily prolonged labor, pelvic pressure, hemorrhage or lack of oxygen may injure the baby's brain
6. A child's full mental development may be arrested after birth by an accident, poisoning, glandular disturbance, chemical imbalance, childhood disease

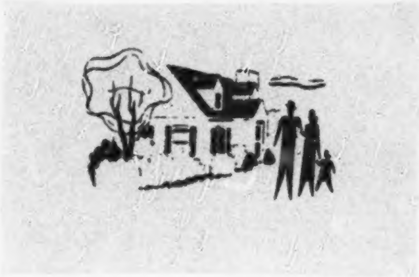
7. Recent research also points to severe early emotional deprivation and other cultural and environmental factors as causes of mental retardation

MILD RETARDATION

IS MORE STRIKINGLY EVIDENT AMONG CULTURALLY & ECONOMICALLY DEPRIVED GROUPS

SEVERE RETARDATION

APPEARS TO BE MORE EVENLY DISTRIBUTED AMONG ALL LEVELS OF THE POPULATION



IV. HOW MUCH MENTAL RETARDATION IS DUE TO KNOWN CAUSES?

About 15% to 25% of cases of mental retardation have a definite known cause. These include:

1. German measles, during the first trimester of pregnancy
2. Meningitis
3. Encephalitis
4. Gargoylism
5. Hypothryoidisn
6. Syphilis
7. Jaundice due to the Rh blood factor of incompatibility

8. Toxemia as a result of carbon monoxide and lead poisoning
9. Physical trauma, including automobile accidents
10. Prenatal injury
11. Postnatal injury
12. Problems in the delivery process
13. Anoxia, which may create brain damage
14. Metabolic disorders, such as PKU, galactosemia and maple syrup disease, which result from improper amino acid chemistry or improper carbohydrate breakdown and absorption.

V. HOW MANY PUBLIC INSTITUTIONS ARE THERE FOR THE CARE OF THE MENTALLY RETARDED REQUIRING INSTITUTIONALIZATION?

1. In 1965 there were 143 public institutions for the care of the mentally retarded. (1)
2. The average daily resident patient population in these institutions in 1965 was 189,254. There were 17,367 admissions during the year, of which 15,033 were first admissions. At the end of the year, there were 188,332 resident patients on the books in these institutions. Net releases totaled 9,385. (1)
3. In 1965 some 245,200 mentally retarded patients were in residential institutions of all kinds, as follows:
   a. The average daily resident patient population in the 143 public institutions for the care of the mentally retarded in 1965 was nearly 190,000. (1)
   b. In addition, an estimated 40,000 mentally retarded were in hospitals for the mentally ill.
   c. An estimated 16,000 were in private institutions.

VI. HOW MANY CHILDREN OR ADULTS ARE WAITING FOR HOSPITALIZATION?

There are waiting lists totaling more than 31,000 for state residential care programs.

VII. WHAT IS THE COST OF INSTITUTIONAL CARE?

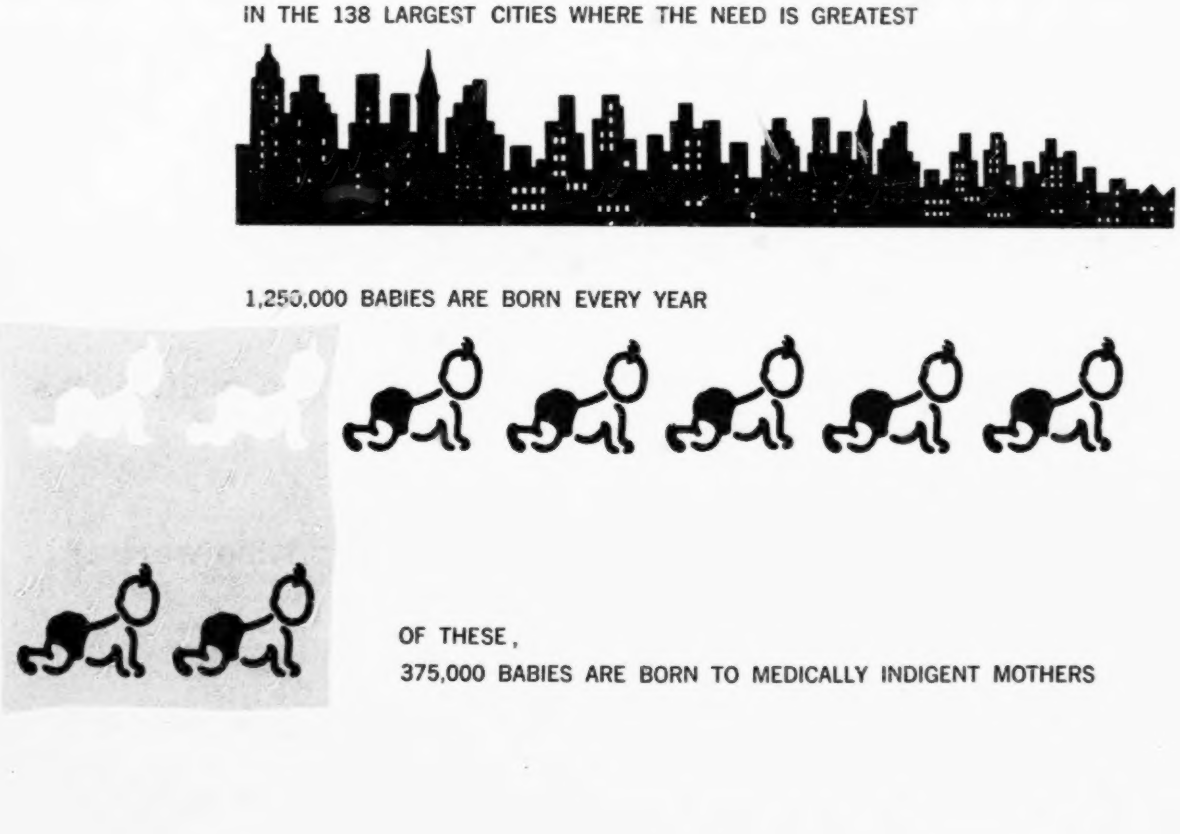
Maintenance expenditures in 1965 in public institutions for the mentally retarded totaled $439,349,514. (1)

This is $2,183 per patient under treatment per year or $5.98 per day per patient under treatment.

Only 4% of the mentally retarded are confined to institutions.

Because of the extensive services which the community must bring to

COMPREHENSIVE MATERNAL AND INFANT CARE
FOR "HIGH RISK" PREGNANCY CASES IN LOW-INCOME GROUPS


IN THE 138 LARGEST CITIES WHERE THE NEED IS GREATEST
1,250,000 BABIES ARE BORN EVERY YEAR
OF THESE,
375,000 BABIES ARE BORN TO MEDICALLY INDIGENT MOTHERS

bear on the other 96%, it is impossible to estimate the total financial burden these mentally retarded impose upon their families and communities, but it is estimated in the billions.

VIII. WHAT IS SPENT ON BUILDINGS TO CARE FOR THESE PEOPLE?

An estimated $100 million annually.

IX. HOW MANY DIAGNOSTIC CLINICS AND WORKSHOPS ARE THERE IN THE UNITED STATES FOR THE MENTALLY RETARDED?

1. Approximately 198 clinics are included in the Children's Bureau listing.
2. There are about 325 workshops specifically for the retarded in the U.S. today.

X. HOW MANY MENTALLY RETARDED COULD BE REHABILITATED IF THERE WERE ADEQUATE FACILITIES?

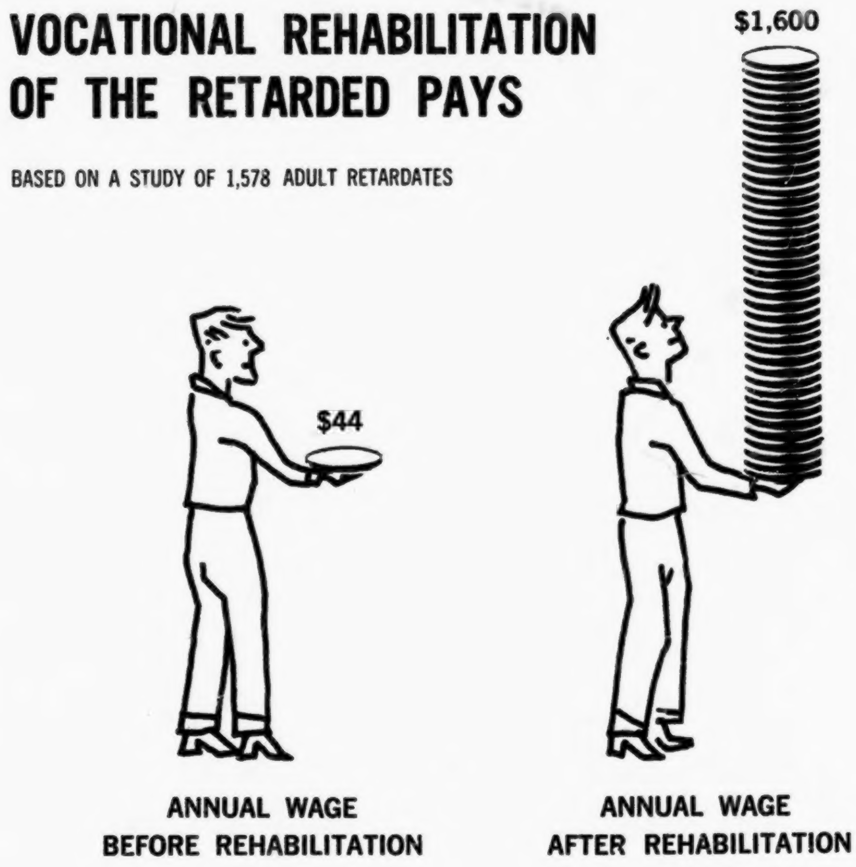
Of the 6 million children and adults afflicted with mental retardation:

1. 75% to 85% are capable of becoming self-supporting, independent citizens both economically and socially if they receive adequate services such as special education and rehabilitation.

2. 10% to 20% are capable of becoming partially self-supporting if they receive adequate services such as:

   a. Training in self-care
   b. Medical diagnosis and treatment
   c. Day-care centers
   d. Sheltered workshops
   e. Counseling services
   f. Programs for recreation

3. Only 5% of all cases remain completely dependent. This group of severely impaired persons requires close supervision and adequate medical care 24 hours a day usually in residential facilities.


VOCATIONAL REHABILITATION OF THE RETARDED PAYS
BASED ON A STUDY OF 1,578 ADULT RETARDATES
$1,600
$44
ANNUAL WAGE BEFORE REHABILITATION
ANNUAL WAGE AFTER REHABILITATION

XI. HOW MUCH IS BEING SPENT FOR RESEARCH IN MENTAL RETARDATION?

About $42,679,964 is being spent for research in mental retardation, as follows:

Federal funds - $33,897,000 in 1965:

U.S. Public Health Service –	
Nat'l Institute of Neurological Diseases and Blindness	$11,002,466
Nat'l Institute of Mental Health	8,743,000
Nat'l Institute of Child Health & Human Development	3,049,000
Other USPHS activities	6,343,534
	$29,138,000
Office of Education, Dept. of Health, Education, and Welfare	1,019,000
Vocational Rehabilitation Administration, Dept. of Health, Education, and Welfare	2,211,000
Welfare Administration (Bureau of Family Services, Children's Bureau)	1,529,000
Total federal funds	$33,897,000

Private funds - $8,782,964 in 1965:

Kennedy Foundation, fiscal year 1965 for construction of facilities & support of approximately 70 research projects	$ 4,500,000
The National Foundation, 1965, in support of research primarily in birth defects	3,908,723
Association for the Aid of Crippled Children, annual estimated expenditures for research in mental retardation	$ 200,000
Nat'l Association for Retarded Children 1965 -approximately	174,241
	$ 8,782,964
Total of Federal & Private Funds Listed	$42,679,964

Thus, while we are currently spending annually $42.6 million for research to find answers to mental retardation, mental retardation costs the nation annually:

$439 million	for maintenance expenditures in public institutions for the mentally retarded;

$100 million for buildings to care for the mentally retarded.

XII. WHAT ARE SOME OF THE PROMISING LEADS IN RESEARCH IN THIS AREA?

1. Chromosomal studies
2. The great many projects in the field of genetics which promise to throw light on the transmission of hereditary defects as well as the findings related to RNA and DNA which suggest how genetic anomalies occur.
3. Biochemical studies on inborn errors of metabolism which include methods of detection and preventive treatment.
4. The Collaborative Perinatal Project of the National Institute of Neurological Diseases and Blindness, (NINDB) which is yielding data on pre-natal obstetrical, congenital and traumatic causative factors. (2)

5. A simple, rapid blood test for diagnosing German measles (rubella) developed by NINDB, suggesting more prevention of retardation. (3)
6. Discovery by NINDB that toxoplasmosis and salivary gland infections may outrank German measles as a hazard to the unborn children of pregnant women. (2)
7. A new technique for early mass screening for phenylketonuria (PKU) designed by NINDB grantees, so that early diet may prevent retardation. (2)

XIII. WHAT ARE THE NEEDS OF THE MEDICAL AND ANCILLARY PERSONNEL WORKING WITH THE RETARDED?

1. Pediatricians - there is a need for increasing interest of greater numbers through medical education.
2. Neurologists
3. Psychiatrists
4. Surgeons - if medicine in general gives greater recognition to the care and needs of the mentally retarded, more corrective and plastic surgery will be performed. A great deal can also be done in more acute surgical treatment - for instance, hydrocephalus, craniostenosis.
5. Orthopedists

6. General Practitioners - who often make the first diagnosis need considerable information and stimulation of interest.

7. Psychologists

8. Speech Therapists - interest in the retarded is growing in this discipline partly as a result of speech research projects. The need for an increase of practitioners and the willingness to serve the retarded is great.

9. Nurses - interest is increasing. The national shortage of nurses is seriously reflected in the limited number of nurses available for the retarded.

10. Social workers - here too the retarded and their families suffer particularly from a shortage of personnel.

11. Physical therapists - this discipline is only beginning to be used and is greatly needed particularly in a preventive role for the severely multiple handicapped retarded.

12. Occupational therapists - can be used much more widely and effectively for educational and training as well as functional correction.

13. Special educators for the blind - who can adapt their skills to the training of the severely handicapped blind retardate.

14. Teachers specially trained in teaching the mentally retarded.

XIV. WHAT NEW LEGISLATION HAS BEEN PASSED TO AID THE MENTALLY RETARDED?

1. New legislation (signed into law by President Johnson in 1965) made available funds of $303,631,000 for mental retardation programs to be carried on by the operating agencies of the Department of Health, Education, and Welfare.
    a. $176,276,000 of this amount is for the support of a wide variety of activities including research studies, demonstrations, professional preparation, services, construction and planning.
    b. The remaining amount $127,355,000 provides for income maintenance of persons who are mentally retarded.
2. Mental retardation legislation authorizes matching grants for the construction of a number of large research centers, university-affiliated research and treatment centers, and community and other non-profit facilities for the care of the mentally retarded.
3. Additional legislation has been enacted (signed into law by President Johnson in 1965) which provides funds through the Department of Labor for "on-the-job" training of the mentally retarded.
    a. $476,000 of this amount provides for "on-the-job" training of 1,500 mentally retarded persons in retail establishments.

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WHAT ARE THE FACTS ABOUT

ARTHRITIS?

ARTHRITIS

WHAT IS THE PREVALENCE AND COST OF ARTHRITIS & RHEUMATISM

WHAT IS BEING DONE FOR PEOPLE WITH THESE DISEASES?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

I. HOW MANY PEOPLE IN THE UNITED STATES HAVE ARTHRITIS AND RHEUMATISM?

1. An estimated 13 million persons (1 out of 15) in the civilian non-institutional population in the U. S. today report that they suffer from some form of arthritis. (22)
   a. 10.4 million reported that they had at some time seen a doctor about their arthritis.
   b. 3.3 million reported limitation of their major activity because of arthritis.
   c. About 700,000 of these were unable to work, keep house, go to school or engage in most recreational activities.
2. Arthritis and the rheumatic diseases are second only to heart diseases as the most widespread chronic illness in the United States today.
   a. Among persons aged 65 and over, heart conditions and arthritis or rheumatism were reported as causing, respectively, 24% and 23% of the limitations of major activity. (2)
   b. Nearly 1 out of 4 women reporting limitations in their ability to keep house named arthritis or rheumatism as the cause. (2)

II. DO CHILDREN ALSO SUFFER WITH ARTHRITIS?

1. An alarming number of young persons also have the disease.
   a. A total of 198,000 victims of arthritis are under 25 years old. (22) Of these:

157,000 are between the ages of 15 and 24.

41,000 are under the age of 15

b. An estimated 57,000 school age and pre-school children are victims.

2. The arthritis of children is frequently the progressive and crippling kind. These children approach adulthood handicapped by a condition which may restrict them vocationally, economically, or socially all the rest of their lives.

   In 30% of cases, the disease continues even up to 15 years after onset with progressive crippling;

   In 25% of cases the disease continues, but with periods of remission and only minor crippling;

   In 45% of cases, the disease becomes inactive after varying periods of time. (5)

III. WHAT ARE THE MAJOR FORMS OF RHEUMATIC DISEASE?

The major forms of rheumatic disease are:

1. Rheumatoid arthritis and its variants:
   a. Spondylitis
   b. Juvenile rheumatoid arthritis (Still's Disease)
2. Osteoarthritis (degenerative joint disease)
3. Gout
4. Rheumatic fever and rheumatic heart disease

IV. HOW MANY PEOPLE HAVE RHEUMATOID ARTHRITIS?

1. Of the rheumatic disease victims who visit doctors or clinics, 30% to 40% suffer with rheumatoid arthritis. (6) (7) (8)

a. Rheumatoid arthritis is a systemic progressive disease that is the worst of the rheumatic cripplers.

b. Its cause is unknown and the onset is insidious. There is no specific cure, though it is often possible to control the disease or ameliorate its manifestations.

c. It strikes young and old alike but usually starts between the ages of 20 and 45 years of age. About 50% of those who are disabled are under 45 years of age.

d. In spite of the vast amount of crippling and deformity to which rheumatoid arthritis leads, the prognosis is by no means as unfavorable as is generally supposed and with early and proper treatment, crippling can be prevented in 70% of the cases.

V. HOW MANY PEOPLE HAVE OSTEOARTHRITIS?

1. Of the rheumatic patients who visit doctors and clinics, 25% to 30% suffer with osteoarthritis in some degree, known also as degenerative joint disease. (6) (7) (8)

   a. This is a painful, occasionally disabling, form of arthritis, whose cause is also unknown, seen more often in persons who are past middle age.

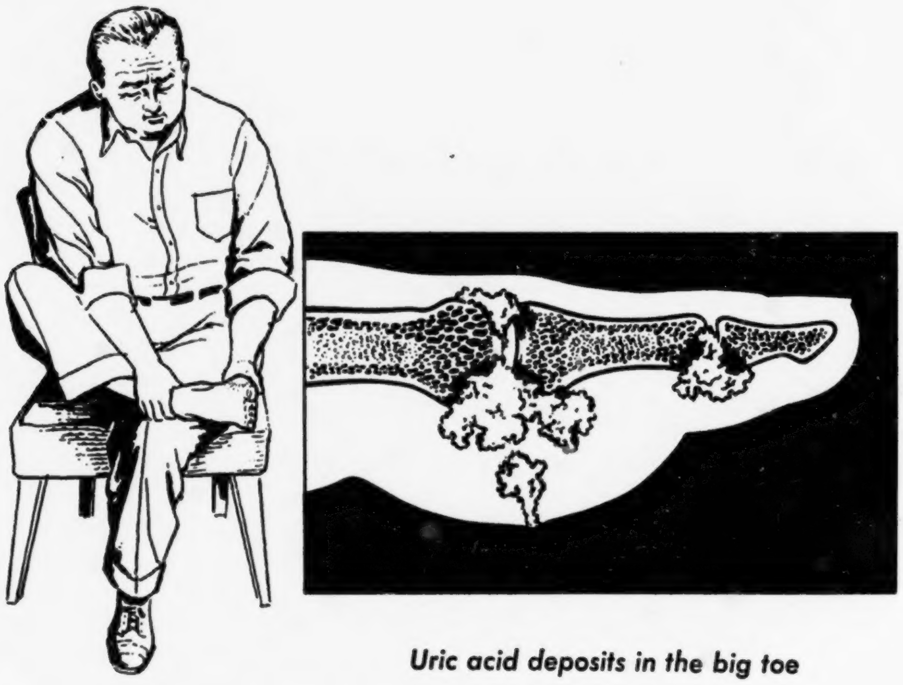
   b. More than 80% of the persons in this nation who are past the age of 50 and 90% of those past 60, have osteoarthritis in some degree by x-ray examination. In only about 12% to 15% of these patients is the disease disabling.

c. No specific treatment is known for osteoarthritis and this form of the disease must be managed by the control of symptoms and the relief of strains on the affected joints. Reconstructive surgery of the chronic osteoarthritic hip is one of the most successful and satisfactory treatments of this frequently encountered condition. (23)

VI. HOW MANY PEOPLE SUFFER FROM GOUT?

1. Another group of patients included in the general classification of arthritis and rheumatism are those suffering with gout. This disease is much more common than has been generally believed. It is estimated that there are some 400,000 sufferers in the United States. (6) (7) (8)

a. Gout or gouty arthritis is considered to be an inherited metabolic disorder. It is one of the few rheumatic diseases which can be effectively treated with present forms of therapy.



Uric acid deposits in the big toe

VII. HOW MANY PEOPLE SUFFER FROM RHEUMATIC FEVER?

1. Very much a definite part of the general classification of arthritis and rheumatism are rheumatic fever and rheumatic heart disease. (6) (7) (8)
   a. About 1/3 of the patients with rheumatic fever develop rheumatic heart disease. Rheumatic fever can be prevented by the prophylactic use of penicillin, or other effective antibiotics.

VIII. HOW MANY OTHER FORMS OF ARTHRITIS ARE THERE?

1. At least 30 other forms of arthritis and rheumatism exist. Most of them are systemic diseases that involve the joints and at times one or more organic structures within the body. Among them are bursitis, fibrositis, myositis, neuritis and neuralgia; and such generalized connective tissue disorders as scleroderma, polyarteritis nodosa and lupus erythematosus disseminatus.

IX. WHAT METHODS OF TREATMENT ARE PRESENTLY IN USE FOR ARTHRITIS AND THE RHEUMATIC DISEASES?

1. Rheumatoid arthritis. (6)
   a. Lacking a specific cure for rheumatoid arthritis and since it is a systemic disease, measures of proved value, for the most part, are directed toward improving the patient's general health - these include rest, nutrition, drugs for relief of pain and for rest and

sleep, physical therapy, psychotherapy and rehabilitation.

b. Measures for the treatment of rheumatoid arthritis on which there is fairly uniform agreement but no complete unanimity include: (9)

(a) Salicylates: The salicylates, of which aspirin is the most common, are perhaps the only drugs that over the years have been widely used in the treatment of rheumatoid arthritis. Aspirin, in adequate dosage, has proved to be one of the most effective and least dangerous of any drug in relieving the symptoms of the disease. Aspirin not only eases aches and pains in joint stiffness, but research indicates that in the early stages of rheumatoid arthritis, the drug probably lessens the inflammatory process that is the basis of the disease.

Aspirin is available in various forms that permit the use of the drug in persons who are unable to tolerate it because of gastrointestinal distress.

(b) Steroid hormones: These drugs are cortisone and hydrocortisone and their synthetic analogues, prednisone, methyl prednisolone, triamcinalone and dexamethasone, etc. The steroids can be quite effective in suppressing the painful and inflammatory symptoms of rheumatoid arthritis. Carefully selected arthritics respond quite well to these highly potent drugs. Care must be taken to guard against serious side reactions.

Any form of treatment is usually most effective during the early stages of the disease. This is also true of the steroids.

As with gold and phenylbutazone, the steroids do not benefit everyone and a good number of arthritics will experience toxic and undesirable side reactions with their long use.

Corticotropin (ACTH), a product of the pituitary gland, though a hormone like the steroids, is in itself not a steroid. ACTH, however, stimulates the production of steroids by the body. Its use has diminished greatly primarily because it can be given only by injection.

(c) Gold Salts: Injections of gold have been effectively used in the treatment of rheumatoid arthritis for at least a quarter of a century. The mode of action of gold on the rheumatoid process is not known. However, experience has shown that about two out of every three persons given gold undergo a beneficial response. Not only does gold restrict the disease activity, but it also suppresses many of the inflammatory changes caused by the rheumatoid process. Not all arthritics will benefit from the use of gold and about 1/3 of them will suffer toxic and undesirable side reactions from it.

(d) Phenylbutazone: This drug is a synthetic chemical compound and not a steroid or a hormone. It is an analgesic for rheumatic complaints (not headaches) and is an effective pain killer in all types of arthritis especially in spondylitis and gout. In the early and acute stages of rheumatoid arthritis, the drug brings about a decrease in joint swelling and muscle stiffness. The action of phenylbutazone, the little that is known of it, is not hormonal in any way and has nothing to do with the adrenal or the pituitary glands where hydrocortisone and ACTH are made by the body. As with gold and the steroids, phenylbutazone cannot be taken by all arthritics; not all will benefit from it and a good many will experience undesirable side reactions.

(e) Anti-malarial drugs: Certain compounds such as chloroquine, which have been developed against malaria, are used in the treatment of rheumatoid arthritis and systemic lupus erythematosus. Care must be taken in their use because of possible systemic toxic effects, including ocular movement. (9)

2. Osteoarthritis. (9)

a. No specific therapy is known for the treatment of degenerative joint disease. Treatment is symptomatic and includes rest for the involved joints, physical therapy, weight reduction, drugs and, in some cases, reconstructive surgery to correct badly deformed joints or other mechanical disturbances. Steroids are also used locally in the joints to relieve pain and swelling.

3. Gout. (10)

a. For more than 400 years, colchicine was the only drug known to be of value in the treatment of acute gout. In the past 15 years, a number of important compounds have been accepted as very useful therapeutic agents: uricosuric agents, such as probenecid (benemid), phenylbutazone (butazolidin) and sulfinpyrazone (anturan) are effective in reducing uric acid concentration in blood and tissues to normal levels. It has been found that in addition to colchicine, phenylbutazone and in some cases ACTH can terminate an acute attack of gouty arthritis within 24 to 48 hours or less. The uricosuric agents have no value in acute attacks of gout, but with prolonged use, the susceptibility of the body to attacks of acute gout is reduced, and more important, the uricosuric drugs prevent the permanent crippling that results from destruction of joints by urate deposits.

Doctors now have what is essentially a 3-pronged attack against gout. They have drugs, colchicine especially, for use during seizures of gout; they have drugs to make the body get rid of excess uric acid; and now they have allopurinol to prevent the body's making too much uric acid in the first place. (1)

4. Rheumatic Heart Disease

a. Treatment is directed chiefly to the prevention and the suppression of inflammation of the heart. With adequate treatment or prevention using anti-microbial agents such as penicillin, the incidence of rheumatic fever following hemolytic streptococcal infection can be reduced almost to extinction. Recurrences of rheumatic fever among known rheumatic subjects, who are unusually susceptible, can be reduced to 2%. Without these agents, the recurrence rate among rheumatic fever subjects following a hemolytic streptococcal infection has been as high as 50%. (10)

X. WHAT IS THE RECENT RESEARCH PROGRESS AGAINST ARTHRITIS AND RHEUMATIC DISEASES?

Although there have been no "major breakthroughs" in arthritis during the past year, recent research progress includes the following: (15)

1. Rheumatoid arthritis was long felt to be inherited in some unknown way. A recent epidemiologic study among Blackfeet and Pima Indians conducted by investigators of the Nat'l Institute of Arthritis and Metabolic Diseases has provided the following interesting results on this question.

   The 2 tribes were selected because they represent genetically homogeneous populations who had lived for generations in physical environments of marked contrast, one warm and gentle, the other cold and inhospitable. The results of these studies indicate that rheumatoid arthritis is not an inherited disease in the classical sense; they further demonstrated that climatic environment, in a simple sense, did not play an etiologic role in rheumatoid arthritis since the Pima Indians, despite their warm climate, harbored as much clinical rheumatoid arthritis and considerably more rheumatoid factor, than their cold-weather counterparts to the North.

   These finds are of critical importance not only in correcting popular medical misconceptions but also in permitting research activities to be directed into different, more pertinent areas. (15)

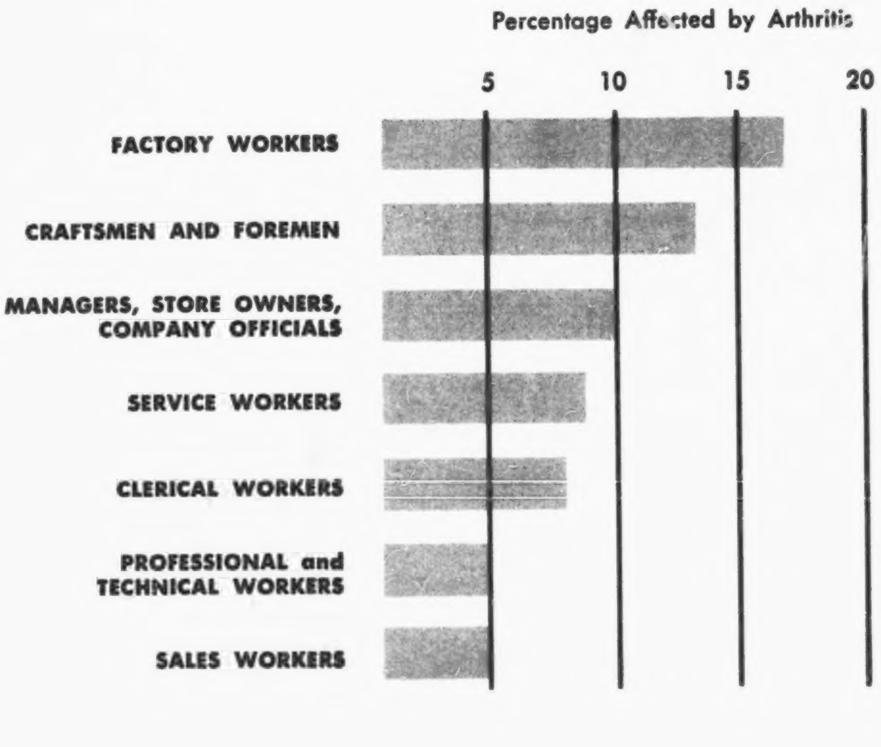
2. Preliminary studies by a grantee of the National Institute of Arthritis and Metabolic Diseases show that an intra-articular injection of an

alkylating agent, triethylenethiophosphoramide, effectively relieves pain and improves joint function in patients with early non-degenerative, inflammatory arthritis, without evidence of severe or prolonged side effects. (15)

Encouraged by these preliminary results, the investigators are currently conducting a more comprehensive double-blind trial of the agent, comparing it with corticosteroid drugs and procaine. (15)

XI. WHAT DO ARTHRITIS AND RHEUMATISM MEAN IN TERMS OF LOST MANPOWER?

1. Arthritis and rheumatism rank second among chronic conditions most often reported as causing activity limitation (heart conditions rank first.) (11)
2. Of 19,273,000 persons reporting activity limitation, 3 million (15.9%) suffered with arthritis and rheumatism. (11)



3. Of these 3 million, 700,000 or 20% were unable to carry on their major activity (work, keeping house, or going to school) because of arthritis and rheumatism. (22)

XII. ARE SOME PEOPLE AFFECTED MORE BY ARTHRITIS AND RHEUMATISM THAN OTHERS?

1. Persons who work outdoors and who work with their hands appear to suffer more from the rheumatic diseases than those in sedentary occupations. (1)

   a. More farmers are stricken with arthritis and rheumatism than individuals in any other field or occupation - 14%. (1)

   b. Factory workers make up the second largest group in this country affected by arthritis and rheumatism - 6.5%. (1)

   c. Three times more women than men suffer from arthritis and rheumatism. (1)

   d. The percentages of various other occupational groups afflicted with arthritis and rheumatism are: (1)

      6.3% of all laborers other than farm laborers;
      6.1% of all craftsmen and foremen in this country;
      6.1% of all private household workers (housewives not included);
      5.8% of all service workers;
      5.5% of all clerical workers;
      5.5% of all sales workers;
      4.7% of all managers, store owners and company officials;
      4% of all professional and technical workers.

XIII. HOW MUCH DOES THE VETERANS ADMINISTRATION PAY IN COMPENSATION OR PENSION PAYMENTS TO VETERANS BECAUSE OF ARTHRITIS AND RHEUMATIC DISEASES?

1. As of September 1964, there were 331,291 veterans receiving compensation or pension payments whose major disability was classified as arthritis or rheumatic disease. The estimated annual value of these payments was $266,652,696. (20)

XIV. WHAT IS THE ECONOMIC LOSS TO THE COUNTRY FROM ARTHRITIS AND RHEUMATISM?

1. Rheumatic disease is conservatively estimated to cost the nation more than $2 billion a year. Of this amount:
   a. More than $1.5 billion is lost in wages and salaries by persons unable to work because of their ailment. (1)
   b. More than $200,000,000 is spent by taxpayers for subsistence allowances for arthritics unable to support themselves. (1)

XV. HOW MUCH DOES THE FEDERAL GOVERNMENT LOSE IN INCOME TAXES?

1. The Federal Government loses in one year in income taxes alone about $570 million because of the 624,000 victims who are unable to work because of arthritis and rheumatism. (19)

XVI. HOW MANY SUFFERERS FROM ARTHRITIS AND RHEUMATIC DISEASE ARE RECEIVING PUBLIC ASSISTANCE?

1. Osteoarthritis, rheumatoid arthritis, and allied conditions were among the 10 primary diagnoses occurring most often among workers for whom a period of disability was allowed in 1960 accounting for 6.1% of the total. (12)
2. Among the women workers these diseases ranked 4th with a total of 8.4%. (12)

XVII. HOW MANY PHYSICIANS SPECIALIZE IN THE RHEUMATIC DISEASES?

1. There are approximately 1700 members of the American Rheumatism Association, a professional society of physicians interested in treatment of or research in arthritis and the rheumatic diseases. (14)

XVIII. WHAT FACILITIES ARE AVAILABLE FOR TREATMENT OF ARTHRITIS AND RHEUMATISM?

1. In the entire United States, there are approximately 350 arthritis clinics for indigent patients. (1)
    a. Most of these clinics are located in larger cities. (1)
2. Less than 1,000 hospital beds in the country are available for the study of the rheumatic diseases. (1)
    a. Of these only about 150 are free beds specifically endowed for the

use of the thousands upon thousands of indigent arthritics. (1)

   b. About 20 free beds for the study of selected arthritis patients are available at the National Institutes of Health, U.S. Public Health Service, Bethesda, Maryland.

3. Of the 125,000 hospital discharges of patients suffering from all forms of arthritis, very few are able to remain long enough to receive much benefit from their hospitalization. (13)

XIX. ARE THESE FACILITIES ADEQUATE?

1. No. The need for additional clinics, hospital beds and rehabilitation facilities and trained personnel to treat arthritis is urgent. (1)
   a. The facilities that do exist are completely inadequate.
2. In view of the increasing knowledge about arthritis in children and the ever increasing population of the aged, this need will grow progressively in the years to come. (1)
3. Facilities are needed to aid in research on the rehabilitation and restoration of bed-ridden arthritics to active life. (1)

XX. WHAT ARE WE SPENDING FOR RESEARCH ON ARTHRITIS?

1. The most recent estimated annual allocations for arthritis research and closely related basic studies total $11,284,886; distributed as follows:
   a. National Institute of Arthritis & Metabolic Diseases,
   U.S. Public Health Service, estimated for fiscal 1965

(out of a total appropriation of $113,162,000) (15)	
(a) Grants to non-federal research institutions for arthritis research, estimated	$6,600,000
(b) Fellowships and traineeships to research scientists, estimated	300,000
(c) Basic and clinical studies at the Arthritis Institute, estimated	1,750,000
	$8,650,000
b. Veterans Administration Dept. of Medicine & Surgery, estimated fiscal 1965 (21)	$ 250,000
c. The Arthritis Foundation (for research in universities, hospitals and other institutions) in 1965 (1)	1,443,040
d. The National Foundation supported basic and clinical research in arthritis in 1963 at major centers in the United States. (Latest year for which information available)	941,846
	$11,284,886

XXI. HOW DOES THIS COMPARE WITH OTHER NATIONAL EXPENDITURES?

1. In contrast with the $11,284,886 currently being spent for arthritis research:

   a. The Agricultural Research Service of the Department of Agriculture is planning to spend an estimated $219 million during fiscal 1965. (16)

   b. The people of the United States in 1964 spent approximately:

      (a) $ 12,630,060,000 for alcoholic beverages. (17)

(b) $ 7,345,870,000 for tobacco products and smokers' accessories. (17)

(c) $ 134,370,000 for toilet water and cologne. (17)

(d) $ 20,930,000 for powder puffs. (17)

2. The current Federal allocation for research on rheumatic disease, Number One Crippler, is about 5% of the $202 million estimated 1965 expenditures of the Forest Service of the U.S. Department of Agriculture for forest protection and utilization programs. (16)
3. A little over $163 million is being spent annually in the field of cancer research, and research fellowships, including expenditures by the Federal Government and by the major voluntary health agencies. (18)

XXII. HOW MUCH DOES THE ARTHRITIS FOUNDATION RAISE ANNUALLY NATIONWIDE AND HOW ARE THESE FUNDS SPENT?

According to the 1965 Annual Report of the Arthritis Foundation, the American people contributed $5,259,071 to the Foundation during that year.

Expenditures for the fiscal year ended June 30, 1965 were as follows:

Research - 26.6%	$1,443,040
Support of patient and community services - 23.1%	1,248,195
Professional, health education and training - 15.8%	857,091
Administration and general services - 11.5%	621,757
Fund raising - 9.9%	536,246
Public information - 7.7%	417,547
Field services - 5.4%	292,313
	$5,416,189

XXIII. WHAT CAN BE DONE ABOUT THE PROBLEM OF ARTHRITIS & RHEUMATISM?

1. Congress must continue to provide funds for research so that a vigorous and direct attack upon the rheumatic diseases can go on without interruption.
2. The problem is centered mainly in the medical schools of the nation where there are inadequacies of personnel, funds and facilities to meet the needs of continued clinical and basic research in the rheumatic diseases.
   a. Federal funds must be provided for the construction of laboratories and other research facilities needed to make possible the greater study of these diseases.
   b. Federal funds must be increased to make possible more grants-in-aid to non-federal institutions, to provide for the purchase of equipment and the payment of stipends to investigators and their staffs, and to finance the laboratories of the National Institute of Arthritis & Metabolic Diseases.
3. A major problem is the need for the training of more physicians in the diagnosis and treatment of arthritis and rheumatism. (1)
   a. Congress must make available to the National Institute of Arthritis and Metabolic Diseases additional funds for training so that young physicians can be trained.
      (a) In fiscal 1965, the National Institute of Arthritis and Metabolic Diseases will spend an estimated $1, 780, 000 in training grants

for arthritis and the rheumatic diseases. (15)

4. The public and all agencies in this field should support and cooperate with the Arthritis and Rheumatism Foundation, and the National Foundation, the national voluntary agencies working toward the same ends. (1)

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(14) Membership of American Rheumatism Association, New York, as of December 1962.

(15) Information Office, National Institute of Arthritis and Metabolic Diseases, Bethesda, Md.

(16) Budget of the U.S. Government, 1966.

(17) From a survey compiled and published annually by "Drug Topics", Topics Publishing Company, New York, N.Y.

(18) A total of $163,308,776 is currently being spent in the field of cancer research, as follows: Government funds (fiscal 1965) $144,857,000; Nongovernment funds, including American Cancer Society, Damon Runyon Memorial Fund, Sloan-Kettering Institute (1964), $18,451,776.

(19) If the 624,000 persons unable to work because of arthritis or rheumatic disease (see Question I) had been able to work and earn the 1964 median income of $6,600 (according to Current Population Reports, Consumer Income, May 27, 1965, Series P-60, No. 44, Bureau of Census, Washington, D.C.), and each claimed 2 exemptions, they would each pay $914 in Federal income taxes, totaling $570,336,000.

(20) Department of Veterans Benefits, Veterans Administration, Washington, D.C., personal communication dated Sept. 28, 1965 from Edward R. Silberman, Controller.

(21) Veterans Administration, Department of Medicine and Surgery, Washington, D.C., personal communication dated September 30, 1965 from Edward Dunner, M.D., Director of Research Service.

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CREDITS

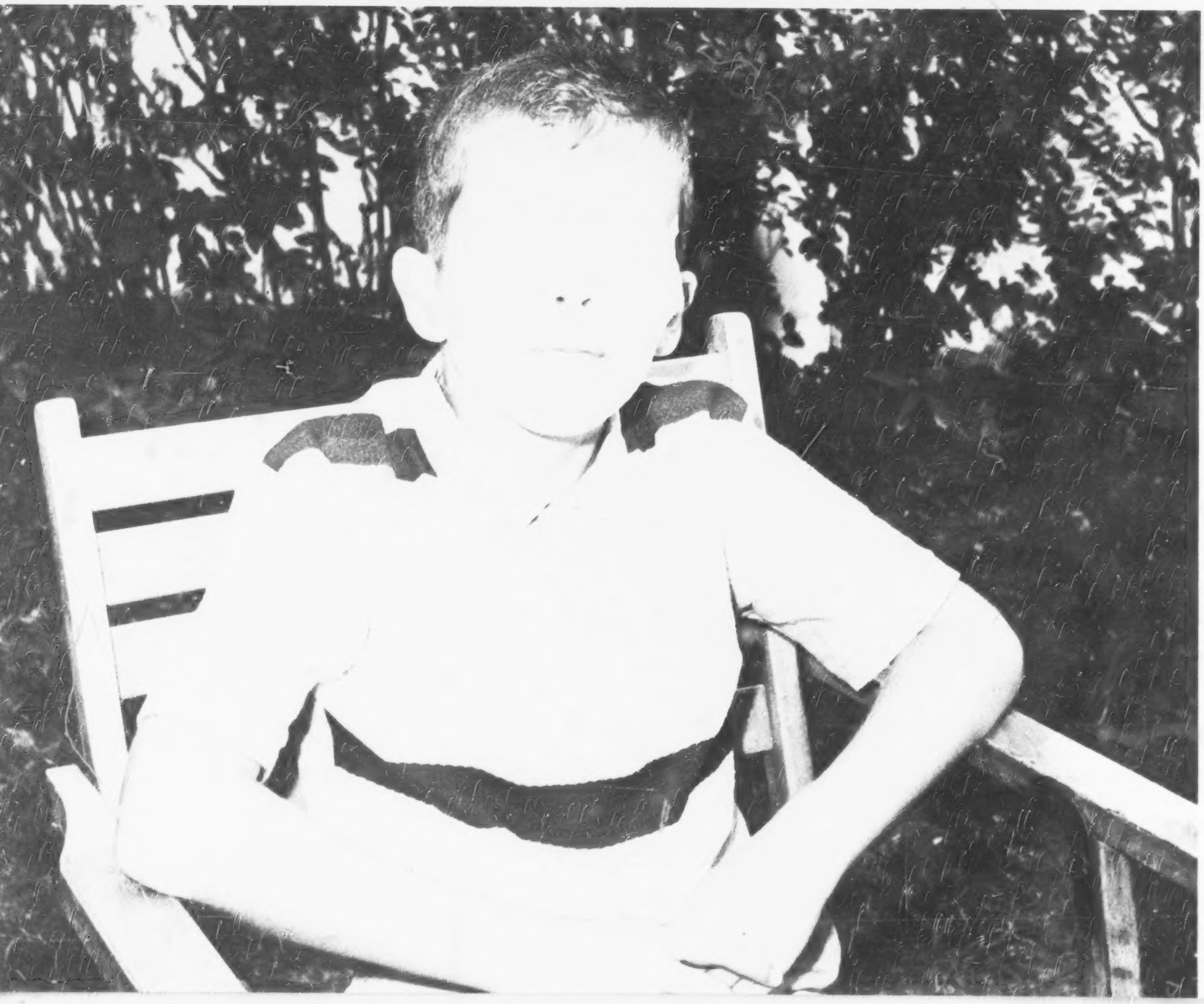
Cover Photograph: Courtesy The Arthritis Foundation.

Art Page 4: Reprinted from "About Gout" a publication of The Arthritis Foundation.

Chart Page 11: From "Arthritis Cripples America" a publication of The Arthritis Foundation.

WHAT ARE THE FACTS ABOUT
BLINDNESS?

1,000,000 BLIND IN ONE EYE
350 THOUSAND TOTALLY BLIND
28 MILLION PEOPLE NEED EYE CARE
100 MILLION PEOPLE WEAR GLASSES



WHAT ARE WE DOING ABOUT POTENTIALLY BLINDING EYE DISEASES?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N.Y. 10017

1966

I. HOW MANY PEOPLE HAVE, OR HAVE HAD TO SOME EXTENT, POTENTIALLY BLINDING EYE DISEASES IN THE UNITED STATES?

1. According to a U.S. National Health Survey report, (1962), about 3.5 million persons among the civilian, noninstitutionalized population in the U.S. have some chronic, permanent non-correctable visual defect. Over half are under 65 years of age. (1)

   a. 988,000 of the 3.5 million have severe visual impairment*. (1)

   * – Severe visual impairments include that degree of visual impairment in a person 6 years old or older which, according to respondent's reply, renders him unable to read ordinary newspaper print with glasses; or, for persons under 6 years of age or who have never learned to read, a report of "blind in both eyes," or in terms indicating no useful vision in either eye.

   b. 32% (312,000) of the severe visual impairment victims were handicapped to the extent that they were unable to work, keep house or go to school. (1)

   c. 27% (266,000) were partially limited in their activities. (1)

2. An estimated 416,400 Americans are legally** blind. (2)

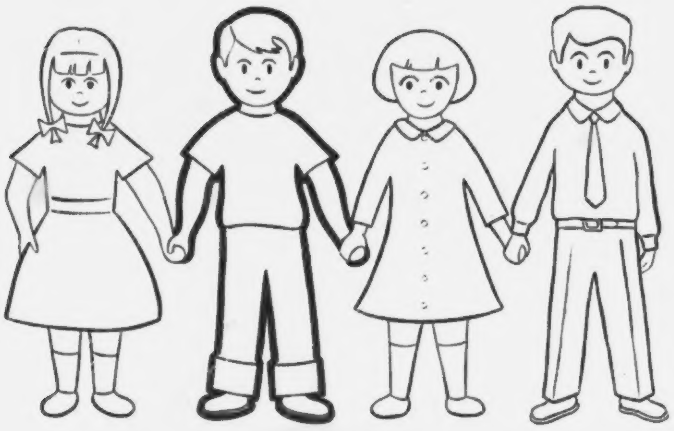
   ** – The legal definition of blindness represents an economic definition derived from the Social Security Act's Title X based on an arbitrary point below which individuals are presumed to be unable to perform economically.

3. 12,235,900 (estimated) children in America require medical attention for their eyes, and a large number of these children should be wearing glasses or undergoing treatment. (2)

4. 31,000 new cases of blindness will strike America this year.

   a. This means 85 times every day of the year an American man, woman or child will lose his or her sight. (7)

5. 90 million Americans - about half our population - have some ocular malfunction. (8)



1 OUT OF 4
SCHOOL CHILDREN
NEEDS EYE CARE

II. WHAT ARE THE MAIN BLINDING EYE DISEASES?

It is well known that the greatest incidence of blindness in the United States is found in such diseases as cataract and glaucoma.

1. Glaucoma
   a. An estimated 1,392,000 persons 40 years of age and over have glaucoma. As many as one half of these do not know they have the disease and may lose their sight if untreated. (2)
   b. Glaucoma causes 13.5% of blindness in America (2)

2. Cataract
   a. Cataracts cause 22% of the blindness in America. (2)
   b. Cataract removal is a frequent eye operation in most hospitals. While surgery is capable of restoring useful vision, the development

of a preventive for cataract would be a major advance. (3)

c. Among the known causes of cataract developing in once-normal eyes are injury, general diseases such as diabetes and vascular diseases, or certain drugs, certain eye diseases (glaucoma) and age. Children may be born with cataract from hereditary influences or because their mother had German measles during the first three months of her pregnancy (3) or from other congenital causes.

d. About 2/3 of the blindness from cataract is of the over-55-years type - referred to as senile type - which is due to a process of aging and degeneration. (3)

Orthoptic technician screens children for amblyopia at Polk County Eye Clinic, Lakeland, Florida — a project supported by USPHS Neurological and Sensory Disease Program.

3. Strabismus (Crossed or Turned Eye)

   a. An estimated 2,910,000 Americans have or have had to some degree a crossed or turned eye (strabismus). (4)

b. A considerable segment of our population is affected by a form of reduced vision known as "amblyopia ex anopsia", a condition in which there is no apparent physical abnormality, but for some reason, the two eyes do not focus together to give the patient binocular vision, often called "lazy eye blindness." Up to now, if the condition was not corrected by treatment in the early developing years, before the age of six, there was no effective measure for correcting it in the adult. However, a new type of retraining technique, referred to as pleoptics, may prove useful in treating adult amblyopia and other visual disorders, and it may become a field of great research importance. (11)

4. Diabetic Retinopathy

a. Diabetic retinopathy has become the scourge of those whom insulin has saved from death only to permit them to live long enough to become blind.

1. It is estimated that there are 1,500,000 diabetics in this country. (6)
2. The most important cause of permanent loss of vision in the diabetic is retinopathy and its complications, vitreous hemorrhage, and associated retinitis proliferans. (3)
3. All with diabetes of 12 to 15 years duration are candidates for diabetic retinopathy. (5)

5. Hypertension

a. Hypertension in our older population has made a more serious eye problem yearly. Occluded central retinal vessels occur frequently as do retinal hemorrhages among our older population.

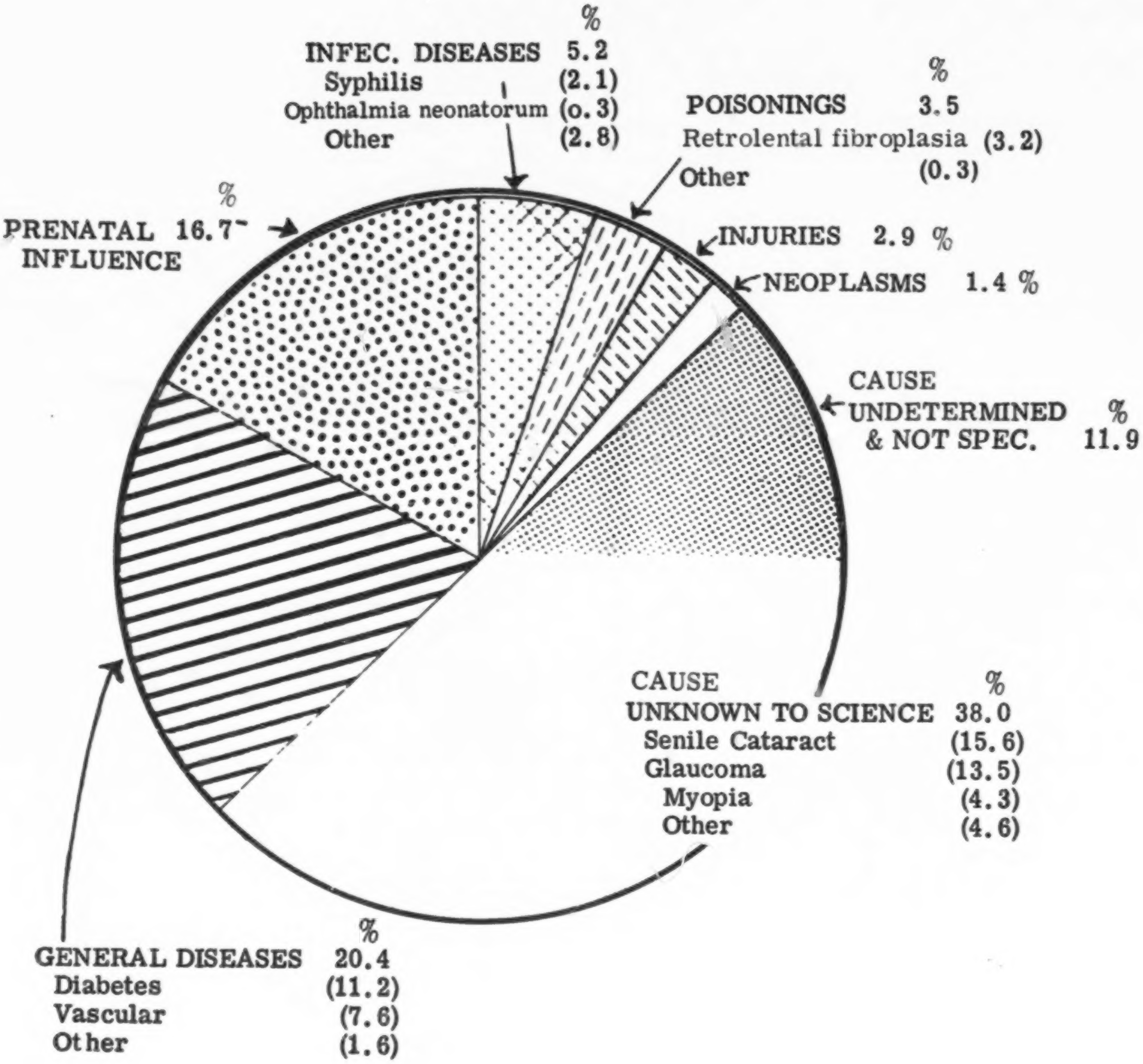
6. Detached Retina
   - a. Detached retina (separation of the inner layers of the retina from pigment layer) is a serious hazard to our population of all ages.
7. Ocular Injuries
   - a. Approximately 300,000 ocular injuries occur in industry alone each year. No estimates are available of the number of injuries occurring outside organized industry (home, farm, school, military service). (2)
   - b. Vast research is needed to prevent disability from these injuries, as well as in the prevention of the injury itself.
8. Uveitis
   - a. Any form of uveitis (inflammation of uvea) is a potentially blinding eye disease. There is no estimate of the number of persons who have or who have had some form of uveitis.
   - b. Notwithstanding the very great benefit from Cortisone and ACTH, 5% of all blindness is still due to the diseases of the uveal tract. (2)

III. IS AGE A FACTOR IN THE INCIDENCE OF BLINDING EYE DISEASES AND BLINDNESS?

1. An estimated 76.7% of the legally blind persons in the United States are 40 years of age and over. (2)

CAUSES OF BLINDNESS

UNITED STATES, 1962
(Per Cent of Estimated Total Cases)



National Society for Prevention of Blindness

2. Increase in longevity is the key factor in the continuing increase of blindness. An estimated 47.2% of the blind population of the nation as a whole are 65 years of age and over. (2) 67% of those reporting severe visual impairments in the National Health Survey were over 65 years of age. (1)
3. Glaucoma is present in 2 out of every 100 persons past the age of 40 and may not be detected until severe damage has been caused. (2)
4. The incidence of cataract increases with age and has been estimated to be nearly 60% in people age 60 and for persons age 80 the incidence of cataract approaches 100%. (12)

IV. WHAT ARE THE MAIN EYE DISEASES THAT HAVE CAUSED OUR PRESENT BLINDNESS?

1. 54.7% of blindness is due to diseases whose exact causes are unknown to science, including: (2)

Cataracts (senile)	15.6%
Glaucoma	13.5%
Prenatal influence, cause not specified	16.7%
Myopia	4.3%
Other specified causes	4.6%
	54.7%

2. 33.4% of blindness is due to known causes such as: (2)

General diseases		Infectious diseases	5.2%
Diabetes	11.2%	Poisonings*	3.5%
Vascular	7.6%	Injuries	2.9%
Other	1.6%	Neoplasms	1.4%
			33.4%

*Includes retrolental fibroplasia, which is due to poisoning from excessive oxygen

3. The causes for the remaining 11.9% of cases of blindness are either undetermined or unspecified. (2)

V. HOW MANY DOCTORS SPECIALIZE IN EYE DISEASES?

There are an estimated 8,400 physicians in the United States today who specialize in eye disorders. Of these, about 6,500 are ophthalmologists and 4,717 are certified by the American Board of Ophthalmology.

VI. HOW MUCH IS BEING SPENT BY THE GOVERNMENT FOR TRAINING GRANTS AND OPHTHALMIC TRAINEESHIP GRANTS?

1. The National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service spent in fiscal 1965 for training grants in ophthalmology - $2,435,498; for career awards in ophthalmology - $42,274. For fellowships in ophthalmology - $276,082. (3)
2. No estimates are available at this time of the amount being spent by other institutions in this area.

VII. HOW MUCH MONEY IS AVAILABLE FOR RESEARCH TO PREVENT POTENTIALLY BLINDING EYE DISEASES IN THE UNITED STATES?

1. Approximately $9,658,445 is being spent by the major agencies listed

for medical research devoted to determining the causes, treatment and prevention of the blinding eye disorders, as follows:

a. Government funds - $8,824,551

(a) $8,788,051 was spent during fiscal 1965 by the National Institute of Neurological Diseases & Blindness (U.S. Public Health Service) for research on disorders of vision apportioned approximately as follows among the leading eye disorders: (3)

Cataract research	$ 628,602
Glaucoma research	969,218
Diabetic retinopathy	3,089,456
Inflammatory & parasitic diseases	1,357,122
Metabolic & degenerative diseases	485,612
Strabismus & neuromuscular disorders	451,576
Injuries & other disorders, including tumors	223,083
General	1,583,382
	$8,788,051

(b) It is estimated the Veterans Administration spent during fiscal 1965 for ophthalmic research only about $36,500. (16)

b. Non-Government funds - $833,894 (for sources listed)

No reliable estimates are available on amounts currently being spent from non-government sources for research in the blinding eye diseases. However, the major national voluntary agencies working in this area reported the following in 1964:

	1964	
	Funds Raised	Allocated To Research
Research to Prevent Blindness Committee	$ 616,209	$ 486,437
National Council to Combat Blindness	383,788	278,574
National Society for the Prevention of Blindness	936,821	68,883
	$1,936,818	$833,894

VIII. HOW DOES THIS COMPARE WITH WHAT WE SPEND ON OTHER THINGS?

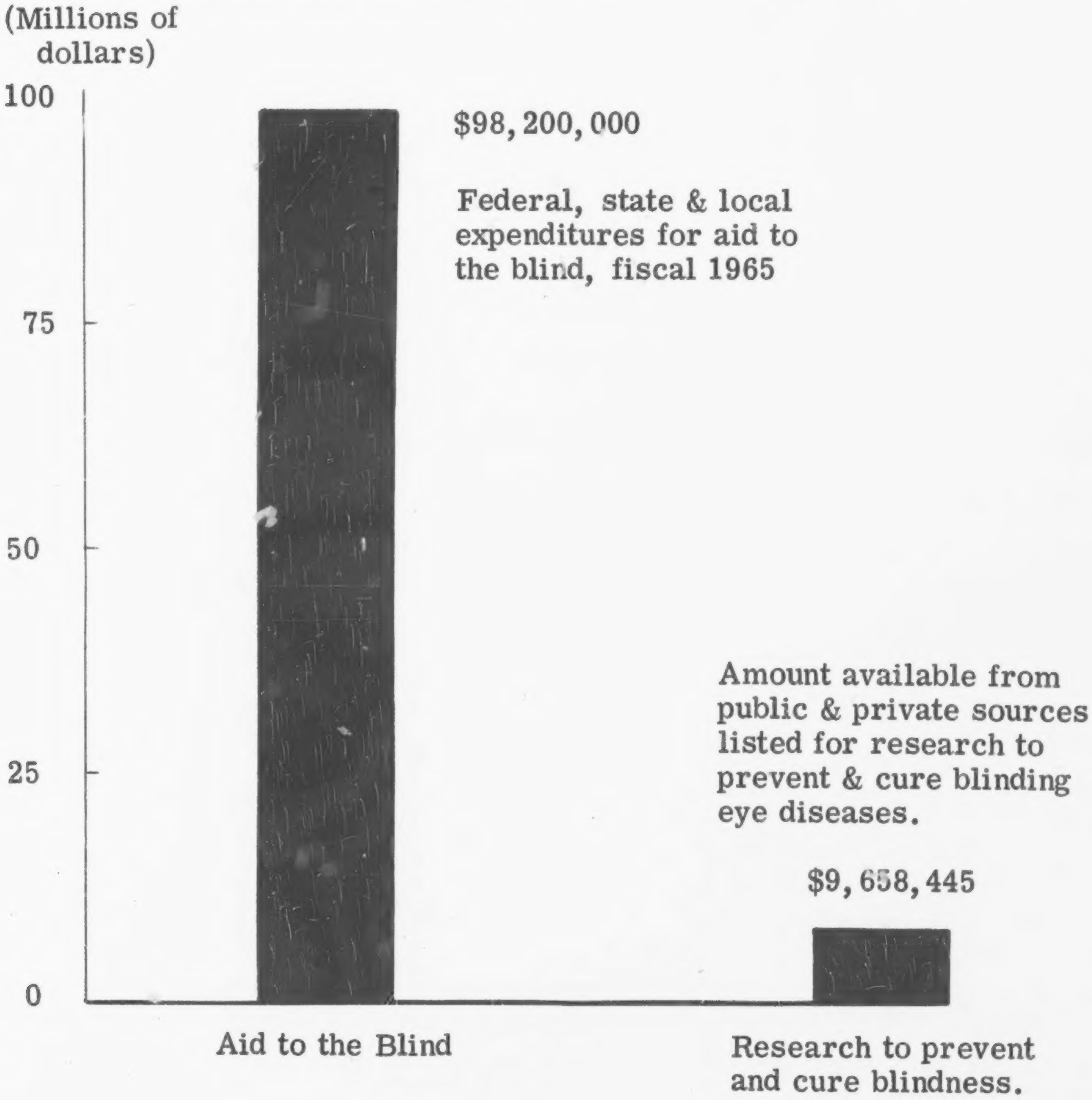
1. In contrast with the estimated total of approximately $9,658,445 which is available from major public and private sources listed for research in blindness and eye diseases, the American people spent in 1964 approximately: (13)

    (a) $165,060,000 for lipsticks

    (b) $127,200,000 for sunglasses

    (c) $30,020,000 for playing cards

    (d) $29,440,000 for bubble bath salts, tablets, oils, etc.



IX. HOW MUCH IS SPENT FROM PUBLIC FUNDS ALONE TO SUPPORT PEOPLE WHO ARE ALREADY BLIND?

1. For the fiscal year 1965, the total amount of public funds only (federal, state and local expenditures) for aid to the blind is estimated at $98,200,000. (14)

   The average number of recipients per month was 97,000, the average monthly payment $84.40. (14)

2. This is in contrast with an estimated total of $9,658,445 which is available from the public and private sources listed for research in the blinding eye diseases.

X. WHAT IS BLINDNESS COSTING THE VETERANS ADMINISTRATION?

1. As of September 1964, there were 7,235 veterans receiving compensation or pension payments whose major disability was classified as blindness; the annual value of these awards was $18,893,640. (15)
2. It is estimated the Veterans Administration will spend only approximately $36,500 in fiscal 1965 for research in ophthalmology. (16)

XI. WHAT ARE THE FINANCIAL NEEDS OF OPHTHALMIC RESEARCH?

1. According to a national survey report put out by Research to Prevent Blindness: "An average of $37.6 million must be provided annually over the next five years if ophthalmic research is to make an initial move toward keeping pace with the general advance of medical science. A five-year goal of $188 million is a minimal figure, embracing only the most

realistic and immediate targets for research support in the nation's research centers." (9)

a. Of this total, $111.6 million must be invested in medical school departments of ophthalmology alone, to meet essential needs: (9)

in manpower	$44.3 million
in equipment & supplies	$18.9 million
research space	$28.2 million
in overhead	$18.6 million
in communications	$ 1.6 million

2. "Legislators must be induced to increase the government's support of ophthalmic research. It must be anticipated that this support will amount to at least $28.2 million annually in the ensuing period of expansion." (9)

3. "Private investment in ophthalmic investigation must be increased to $9.4 million annually over the next five years to sustain a balanced pattern of government-private partnership in assisting the total research effort." (9)

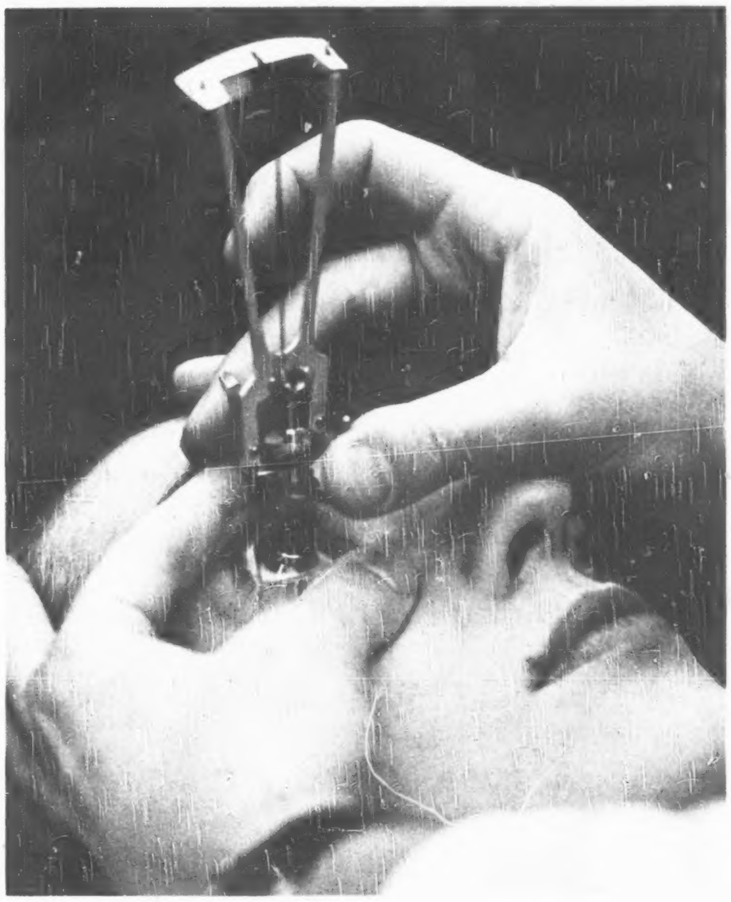
XII. HAS MEDICAL RESEARCH IN EYE DISEASES PAID OFF? YES!

1. Following the initial discovery of the usefulness of Cortisone and ACTH (corticotropin) in the treatment of various eye diseases, additional research has demonstrated more impressive results with newer steroids, such as Prednisone and Prednisolone, dexamethasone, Betamethasone, and many others.

   a. Beneficial and promising results have been obtained in such eye conditions as diffuse uveitis, iridocyclitis, iritis, post-operative inflammations, marginal corneal ulcers, allergic conjunctivitis.

b. Uveitis once caused 15% of all blindness. Now, because of medical research progress, uveitis causes only 5% of blindness. (5)

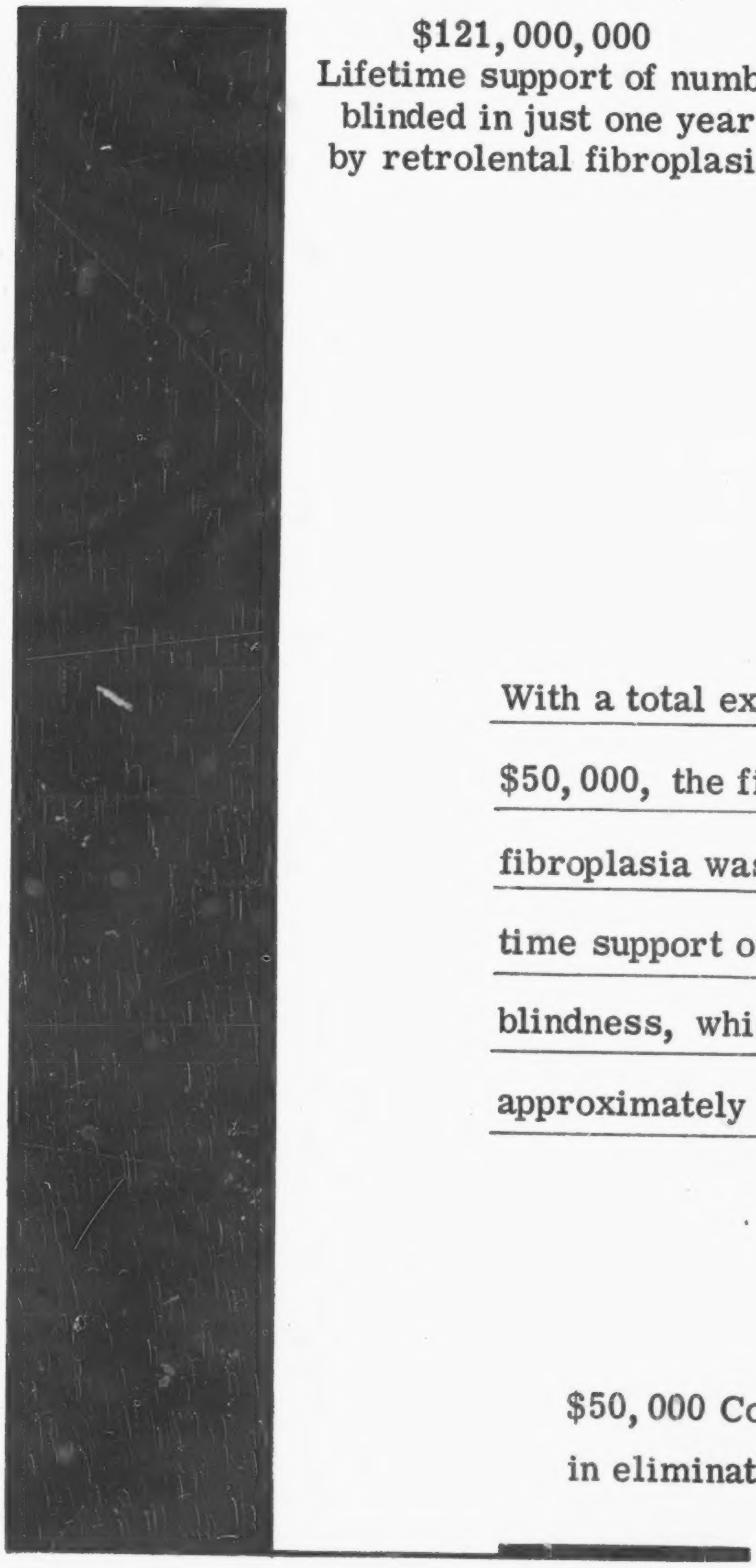
2. Certain antibiotics, especially penicillin, and other chemotherapy have proven curative for eye infections especially from syphilis. It is now possible to select agents which are highly effective in the treatment of a specific type of infection. Because of these developments, certain diseases have virtually disappeared in the United States, as for example, trachoma, gonorrheal ophthalmia and syphilitic interstitial keratitis, and optic neuritis. (3)



3. Enucleations have decreased tremendously following the development of newer, more effective anti-inflammatory and anti-glaucomatous medications. Eyes which once faced removal are now seeing, as a result of medical research pay-offs. (5)

4. Retrolental fibroplasia was between 1945 and 1955 the prime cause of blindness among infants. According to a 1952 estimate nearly 2,000 new cases of blindness each year were caused by retrolental fibroplasia. Through a cooperative study supported by the

National Institute of Neurological Diseases and Blindness, the National Foundation for Eye Research and the National Society for the Prevention of Blindness, involving 18 hospitals, the cause of the disorder was clarified and preventive measures developed.



With a total expenditure of a little more than $50,000, the final answer to retrolental fibroplasia was obtained. The saving in lifetime support of the 1,860 annual cases of blindness, which are prevented yearly, is approximately $121 million.

The cause was established as the use of too much oxygen or some defect in the regulation of oxygen administered to premature infants. As a result, the disorder has been practically eliminated and in 1958 it is estimated that only 28 cases occurred.

XIII. WHAT OTHER PROGRESS HAS BEEN MADE?

1. A cure for herpes simplex keratitis has been found. The drug called IDU, used to treat cancer patients, was found to be a cure for herpes simplex keratitis by a grantee of the National Institute of Neurological Diseases and Blindness. The cure is thought to be the first successful treatment of a virus disease in man with an antiviral drug. Herpes simplex keratitis is a prominent cause of blindness in this country; it is probably the leading cause of corneal scarring necessitating transplant operations. (3) This medical research pay-off will decrease the number of needed corneal transplants. (5)
2. A new technique for removing congenital cataracts in children allows the opaque lens (cataract) to be drawn out by "needle aspiration" instead of breaking the fibers which hold the lens in place. Cataract surgery in children was previously very difficult because of the toughness of these fibers, which had to be broken in order to extract the lens. (3)

   Adult surgery for cataracts is often facilitated by the enzyme, alpha-chymotrypsin, which studies supported by the National Institute of

Neurological Diseases and Blindness have proved to be safe to use. This chemical weakens the ligament holding the lens so that the lens is more easily tumbled out. (3)

3. Progress has been made in research relating to the preservation of corneas for transplants or graftings to replace opaque corneas of patients. In addition to preservation by dehydration, recent studies indicate that corneas may also be stored and shipped in the deep frozen state. Since freezing is a simpler process, it makes possible the storage of donor material until needed. (3)

4. Electronic computer techniques have widened the scope of the ERG (electrical recordings of the eye's response to light - electroretinography) as a clinical tool. By means of these techniques, investigators have been able to record ERG's where there was no response by conventional recording methods, and have been able to detect a difference in response depending on the part of the retina stimulated. This finding will aid in determining the part of the retina affected by disease or degeneration. (3)

5. A new technique for exercising and retraining the macula of the eye with a red light may prove useful for the treatment of ambloyopia. Referred to as pleoptics, the new technique may restore binocular vision to persons whose sight in one eye has been dimmed through disuse. (3)

6. Great advances have been made in the development of optical devices for patients with low levels of visual acuity. These devices include

contact lenses, telescopic spectacles and a host of visual aids for the magnification of visual material both for direct observation and by projection. Visual education is thus made possible for people with as low as 2/200 visual acuity. (3)

7. Evidence is accumulating from research in the basic sciences and in some related clinical fields that some of the enzymes are of great potential value, - the effects of these substances in the metabolism of the various tissues of the eye need much more investigation. (2)
8. Twenty years ago the major causes of blindness among infants and children were ophthalmia neonatorum, interstitial keratitis, and phlyctenular keratitis (inflammation of the cornea characterized by the formation of pustules or papules on the cornea), and other infectious diseases of the cornea. Research leading to the discovery of antibiotics and steroid therapy and clinical research in their use have resulted in the virtual elimination of these conditions. (10)
9. However, a great amount of research and larger sums of money are needed for both laboratory and clinical research on the remaining blinding eye diseases.

XIV. WHAT APPROACHES ARE CURRENTLY AVAILABLE IN MEDICAL RESEARCH WHICH MIGHT BE EXPECTED TO REDUCE THE NUMBER OF PERSONS WHO MAY BECOME BLIND?

1. Fundamental Research
   a. These include application of recent advances made in biochemistry,

physiology, nutrition, and infections including immunology and epidemiology, to determine the mechanism of the underlying disorder which is associated with diseases of the eye leading to blindness.

2. Clinical Research

a. Recent laboratory and clinical research has provided strong evidence that primary, open angle glaucoma, the most common type, is inherited as a recessive trait. Unaffected offspring are probably carriers and may transmit the gene to their own children. A broad-scale glaucoma detection survey supported by the Chronic Disease Program of the Bureau of State Services, Public Health Service, found glaucoma to occur more frequently among brothers and sisters of glaucoma patients than among parents or offspring of glaucoma patients. These results are consistent with a recessive trait. (3) Until recently, doctors were concentrating their attention on screening surveys to detect glaucoma in the over-40 group. As a result of recent research they have begun to think in terms of detecting a susceptibility to glaucoma at an early age before any permanent changes have resulted in the eye. (3)

A 5-year study of methods for screening and diagnosis of glaucoma was launched by the National Institute of Neurological Diseases and Blindness toward the end of 1959. Financial support now comes from the Chronic Disease Program of the Bureau of State Services, Public Health Service. Practical means for early and accurate detection of glaucoma are the goal, and new techniques or improvement of present techniques are sought. (3)

b. Also, hypertension and arteriosclerosis in our older population have made a more serious eye problem yearly. Hypertension and arteriosclerosis are leading causes of various diseases of the retina, leading to blindness, such as obstruction of the central retinal artery, retinal hemorrhage, retinal venous thrombosis, embolism of the retinal artery, arteriosclerotic retinitis.

Research is urgently needed in hypertension and arteriosclerosis to prevent blindness caused by these cardiovascular diseases.

XV. WHAT IS NEEDED IN THE FIGHT AGAINST BLINDNESS AND THE EYE DISEASES?

1. More medical research funds are needed by the National Institute of Neurological Diseases and Blindness of the U. S. Public Health Service, or a new National Institute for Eye Diseases under consideration by Congress, for blinding eye diseases including funds for the construction of research facilities, and research centers. (See Question XI.)
2. Increased support of medical research and training is needed by the major voluntary agencies concerned with blindness and eye diseases. (See Question XI.)

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Chart Page 5: Source - National Society for the Prevention of Blindness.

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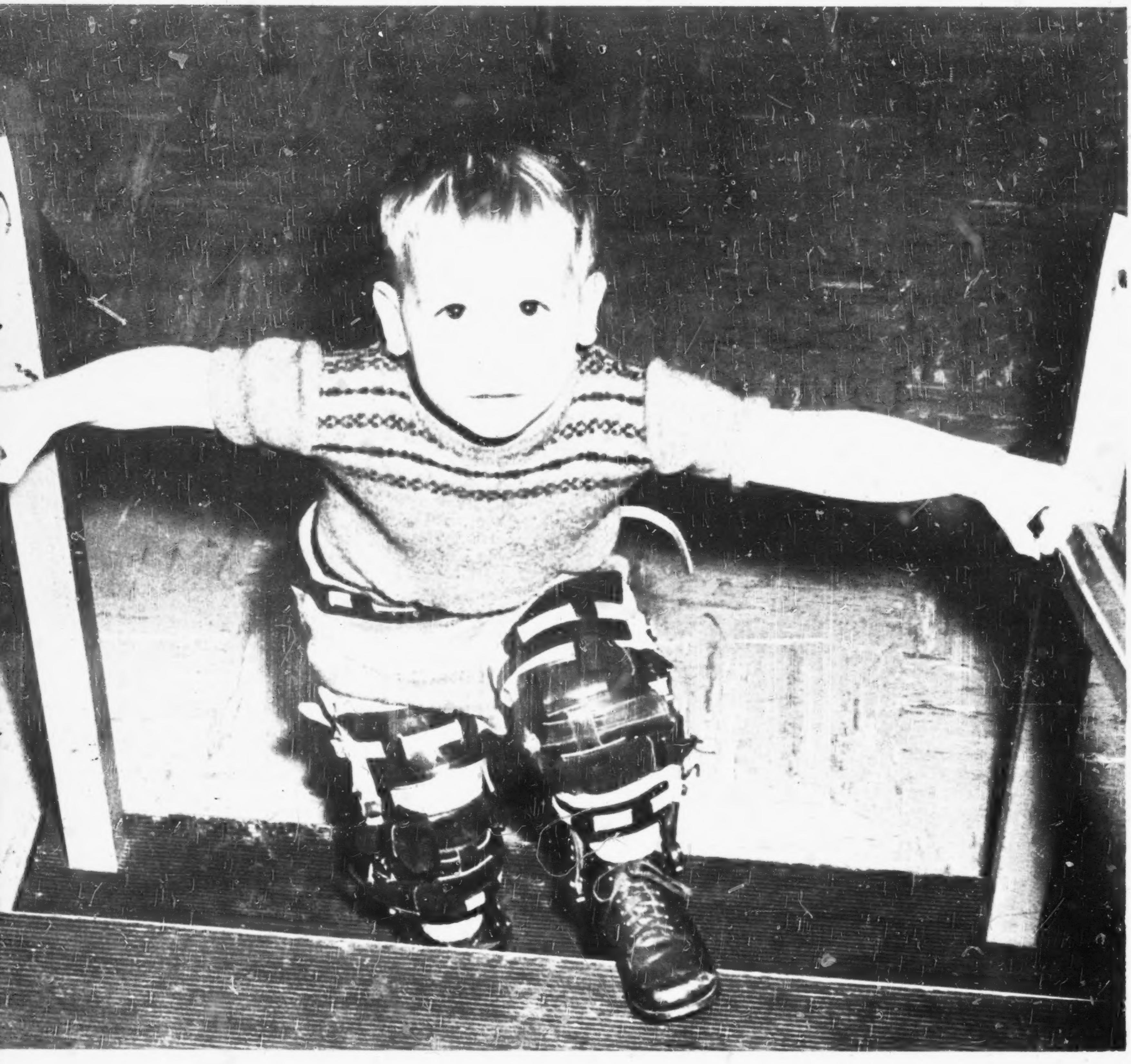
5

WHAT ARE THE FACTS ABOUT

CEREBRAL PALSY?



WHAT ARE THE FACTS ABOUT CEREBRAL PALSY?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N.Y. 10017

1966

I. WHAT IS CEREBRAL PALSY?

1. Cerebral palsy is the general term applied to a group of disabilities resulting from damage to the developing brain which may occur before, during or after birth. It is characterized by loss or impairment of control over voluntary muscles. (1)

   The condition may be severe or very mild; many muscles may be affected, or only a few. The lack of control may be in the arms, legs, tongue, speech mechanism, eyes, or movements. The extent of the disability varies widely and may affect the entire range of muscular activity. In addition to disturbance of motion, there is often interference with vision, hearing, sensory perception and intellectual capacity, and convulsive seizures are not uncommon. (1)

2. Cerebral palsy occurs most frequently as a result of conditions in the prenatal stage of development or in the birth process. It may occur in childhood or adult life as the result of accident, illness, infection or blood type incompatibility. Cerebral palsy is commonly associated with premature birth. Anyone may be affected by the condition, regardless of race, economic standing or environment, since anything which can kill or damage brain tissue can cause cerebral palsy. (1)

II. HOW MANY PEOPLE ARE SUFFERING FROM CEREBRAL PALSY IN THE UNITED STATES?

It is estimated that throughout the United States there are at least between 550,000 and 600,000 persons with cerebral palsy, one third of whom are under 21 years of age. (1)

With better reporting of this disability, it has been found that the caseload of cerebral palsied persons is growing steadily. With unrelenting regularity, about 10,000 babies are born with cerebral palsy annually - one every 53 minutes. (1)

Adults of all ages may become palsied through automobile accidents, industrial mishaps, severe illness, strokes or other causes. (1)

III. WHAT IS THE EFFECT OF CEREBRAL PALSY ON LIFE EXPECTANCY?

Cerebral palsy in young people is rarely in itself a cause of death, but it is a permanently disabling condition. The patient with cerebral palsy who survives early childhood often has a relatively normal life expectancy.

However, one study reports the death rate is about 13 times that expected in a normal male population, 17 times as great among females. (11) More statistical research is needed to be able to state the relevance of these New York State statistics to the national population.

IV. WHAT ARE THE SYMPTOMS OF CEREBRAL PALSY?

1. Symptoms: The disorder may be recognized by awkward or involuntary movements, lack of balance, irregular gait, guttural speech, grimacing, drooling, which are caused by loss of muscle control. (1)

This may or may not be associated with seizures, intellectual variations, learning difficulties, which are related to extent of brain dysfunction.

2. Spasticity (muscular spasms) is the most frequently occurring motor symptom of cerebral palsy, but there are also four other main types:
   a. athetosis (marked by a constant recurring series of slow involuntary uncoordinated movements of the hands and feet);
   b. ataxia (failure of muscular coordination or irregularity of muscular action);
   c. tremor and
   d. rigidity. (1)
3. Research studies made in the United States and Great Britain continue to show that over 50% of cerebral palsied persons have a markedly limiting mental deficit. (3) However, there is a wide range of intelligence in the remaining percentage, a few attaining gifted levels.

V. WHAT ARE THE MAIN CAUSES OF CEREBRAL PALSY?

1. Injury to the motor centers of the brain, before, during or any time time after birth, including cerebral hemorrhage and clots. (1)
2. Congenital malformation of the brain. (1)
3. Incompatibility of blood types (Rh, A-B-O, etc.) (1)
4. Severe illnesses such as encephalitis, scarlet fever, whooping cough, diptheria, German measles, and other virus diseases, as

well as infections such as toxoplasmosis. (1)

5. Prematurity (premature births). (3)
6. In aging persons, arteriosclerosis or degenerative disease may produce symptoms identical or similar to those of cerebral palsy.

VI. WHAT ARE THE NON-MEDICAL ASPECTS OF CEREBRAL PALSY?

a. Cerebral palsy, in common with other physical handicaps, poses many serious educational, economic, social and emotional problems. Some parents, when they first learn that their child is palsied, sustain a feeling of guilt that one or both of them may somehow have been at fault, but this is not substantiated by research. (3)

b. Maladjustment between the parents, their attitude of over-protection or rejection of the handicapped child, and their attitude towards other children and members of the family, combined with community attitudes of rejection, have caused great mental and emotional problems both to the family and the handicapped child.

c. The needs of the cerebral palsied are those common to all children, accentuated by their physical handicap -- need for parental affection spontaneously demonstrated; opportunities for recognition, for achievement, and for development of independence; and satisfying social relationships both with their contemporaries and with adults. The need to belong to a group and to have opportunities to develop a sense of personal worth are especially important to the teen-ager.

d. Since emotional problems of children with cerebral palsy may in some instances be even more disabling than the physical disability itself, special attention is necessary to programs of parent education, psychological guidance and counseling, and to wholesome recreation and social programs at every age.

e. The economic problems of providing long term treatment or residential care may often result in financial sacrifices that place a very heavy burden upon other members of the family. Few families have the resources to meet these costs, making it necessary to consult public and private resources. (1) Probably less than 1/5 of all people with cerebral palsy can become vocationally rehabilitated, another 20% partially vocationally rehabilitated, and the remainder will need partial or total life care. (1)

The problem of proper medical and related treatment, research and educational facilities for cerebral palsied individuals is therefore becoming increasingly recognized as a community responsibility. (1) Effective treatment of children with cerebral palsy is especially complicated by the fact that impairment of speech, hearing, loss of perception, convulsions and retarded mental development often accompany the physical handicap. (1)

f. Public education is an important factor in reducing the number of cerebral palsy cases. Research and education have been major factors in reducing the extent of brain damage due to the Rh blood factor and improper obstetrics and, hopefully, can reduce the number of brain damaged children due to premature delivery, virus infections and accidents.

VII. WHAT IS THE ECONOMIC COST OF CEREBRAL PALSY?

About $1.8 billion yearly:

The cost of care for the 225,000 totally disabled victims of cerebral palsy totals about $225 million each year, assuming a $1,000 per annum maintenance cost for these totally disabled cerebral palsied cared for at home.

The cost of care for the 275,000 partially disabled totals about $137,500,000 each year, assuming a $500 per annum cost each for physicians' fees, drugs and special management.

Where disability exists, the costs of medical care and lost wages for each individual during an average life span have been estimated at from $75,000 to $150,000 per individual, depending upon the extent of disability. The cost to the nation totals billions of dollars. (10)

The cost of caring for the 50,000 institutionalized cerebral palsy sufferers totals about $100 million yearly, assuming a $2,000 per annum maintenance cost for each of these individuals cared for in public and private institutions.

The loss to the nation in terms of productivity is in excess of $1,350,000,000. (8)

VIII. WHAT IS BEING DONE TO HELP THE VICTIMS OF CEREBRAL PALSY?

Since damage to brain tissue cannot yet be repaired, there is no cure for cerebral palsy as such.

Research to develop means of prevention through improved prenatal care, control of infection, reduction of accidents, and other methods must continue and expand. (4)

Research projects, aimed at prevention as well as at alleviation through more effective treatment, are in progress at hospitals, clinics and medical schools in most states and in many countries overseas. (1)

With proper treatment and training, persons so handicapped often can and do improve physically. (1)

Special class for cerebral palsied children in one of the many United Cerebral Palsy Centers throughout the country.

During the past few years there has been a rapid expansion of diagnostic, treatment, service, special educational and recreational facilities for children and adults with cerebral palsy. These facilities include diagnostic clinics, rehabilitation therapy centers, pre-school facilities, or day care centers, sheltered workshops, camps, homebound programs, community rehabilitation centers, and other special services. In addition, considerable emphasis is being placed on earlier identification of brain damaged infants and on the development of effective management services promptly.

In spite of the progress which has been made in helping those cerebral palsied victims who are treatable and educable, there still remains a dire need for certain types of facilities and programs for those cerebral palsied individuals who are sufficiently mentally deficient as to require life-long care. Supportive services for families as well as various alternatives to institutional care are being pioneered in a number of communities for those with cerebral palsy who are mentally normal but severely physically disabled. (3)

Agencies now cooperating in cerebral palsy work include:

a. Federal agencies - The National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service; the Crippled Children's Services of the U.S. Children's Bureau; the Vocational Rehabilitation Administration; and the Veterans' Administration. (1)

b. National voluntary health organizations - The United Cerebral Palsy Associations, Inc., and its state and community affiliates; the

National Society for Crippled Children and Adults, Inc., and affiliated Easter Seal Societies in every state, and Puerto Rico; Association for Aid to Crippled Children. (1)

c. Some state and local tax supported services - State Departments of Health and Welfare, State Departments of Education, State Hospital Schools, State Vocational Rehabilitation, and public school services for crippled children. (1)

d. Professional organizations, such as the American Academy for Cerebral Palsy, the American Academy of Neurology, American Neurological Association, the American Academy of Pediatrics, The World Commission for Cerebral Palsy, etc. (3)

e. Civic, service and fraternal groups which support direct service and research activities, as well as programs for recruitment and training of professional workers. (3)

IX. HOW ARE SERVICES FOR THE CEREBRAL PALSIED AND PUBLIC AND PROFESSIONAL EDUCATION OF CEREBRAL PALSY BEING FINANCED?

In 1965, the nation-wide campaign of United Cerebral Palsy Associations, Inc. and affiliates realized $11,608,946. (1)

The national headquarters of United Cerebral Palsy spent the following amounts for the year ended Sept. 30, 1965, for education and service (excluding research and training):

Development of affiliates' professional service programs	$ 86,717
Public information & education	181,545
Medical supervision & program coordination	57,111
Special education for cerebral palsied	22,032
Adult vocational & service programs	9,364
Legislative information	52,495
Assistance in operations of affiliates	392,394
Development & coordination of women's activities	35,904
Total	$837,562

Young children at the day camp visiting the adult camp and finding they have much in common at camps run by United Cerebral Palsy, Westchester, N. Y.

For the fiscal year ending August 31, 1963 funds raised by the National Society for Crippled Children and Adults, through the annual Easter Seal Campaign, were $15,889,983. (3) To this total, other sources of income of the National Society for Crippled Children and Adults added $5,699,141. (3) - making a grand total of $21,589,124. Estimated 1964 funds total $23.6 million. (3)

Other public and private agencies contribute indirectly to cerebral palsy work by providing facilities and services that are not used exclusively for that purpose. Funds from public or private sources to aid crippled children, mental defectives, under-privileged families, veterans, etc., may involve cerebral palsy treatment, but because they are not so labelled it is impossible to compute how much indirect financing is being done in the field of cerebral palsy nationally. (1)

X. HOW MUCH MONEY IS AVAILABLE FOR RESEARCH IN CEREBRAL PALSY?

About $14,603,210 as follows:

1. Voluntary agencies' funds listed total $853,061

   a. United Cerebral Palsy spent in 1965 for project and program grants in research and in professional training programs in cerebral palsy (1) $ 853,061

   b. Other national voluntary health organizations such as the National Society for Crippled Children and Adults and the National Foundation have provided funds for research in fields closely related to and affecting our knowledge of cerebral palsy. (1)
   For the fiscal year ended August 31, 1965 the Easter Seal Research Foundation Fund of the National Society for Crippled Children and Adults expended $265,066 for all medical research within its area of interest. (3)

   In addition, the Society spends over $8,900 a year for cerebral palsy scholarships in its professional training program. (3)

2. Government funds listed total $13,750,149. (4)

   a. The National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service spent in fiscal year 1965 for research in cerebral palsy,

and other chronic neurological disorders of childhood and adolescence	$13,750,149.
Total of all funds listed	$14,603,210.

3. In comparison with the above fourteen million, six hundred thousand dollars, the American people spent in 1964 approximately: (5)

   $359 million for chewing gum
   $199 million for ballpoint pens and refills
   $ 49 million for nail polish and enamel

4. Public awareness of cerebral palsy as a national health problem is of such recent origin that research funds in this field still fall far short of minimum needs.

XI. WHAT ARE SOME OF THE PROBLEMS IN CEREBRAL PALSY WHICH REQUIRE RESEARCH?

1. The target areas of cerebral palsy research may be grouped under three basic classifications of medical research: (3)

   a. Prevention. In a long-term, nationwide collaborative study seeking clues to the causes of cerebral palsy and related disorders, nearly 60,000 expectant mothers are being observed through pregnancies and their infants examined from birth through school age. The National Institute of Neurological Diseases and Blindness, Bethesda, Maryland, 20014, provides the grants, and acts as the central laboratory and coordinator for this multidisciplinary study. It is hoped that such disorders may be prevented when the causes are more fully known. (4)

b. Diagnosis - particularly the diagnosis at an earlier age in order to start appropriate treatment as early as possible.

c. Therapy (treatment)

Both basic and clinical research is needed in each of these areas. The basic research attempts to understand the essential mechanism of central nervous system functions. The clinical research involves study of the problems of management of cerebral palsied patients, evaluation of various methods of treatment and planning facilities to meet their needs. (3) (4)

2. The following is a partial list of projects that require basic or clinical research in the field of cerebral palsy: (1) (4)

a. Experimental neurophysiology in animals

b. Drug therapy

c. Isoimmunization (concerning Rh factors in blood and other types of blood incompatibility)

d. Development of vaccines against virus diseases, such as German measles in pregnant women, and encephalitis, which often causes cerebral palsy

e. Neurosurgical and orthopedic methods of treatment

f. Chemical causes of arteriosclerosis (hardening of the arteries) and cerebral hemorrhage

g. Special psychological testing methods

h. Investigation of brain anatomy and pathology in cerebral palsy

i. Obstetrical problems relating to anesthesia, instruments, anoxia and the mechanics of labor

j. Education of undamaged parts of the brain to take over the functions of the damaged part

k. Treatment methods - ways of applying physical therapy, occupational therapy, speech therapy, and psychological therapy

l. Early application of treatment (by teaching the family) in order to decrease the severity of disabling conditions in later life

m. Bracing, prostheses and special equipment

n. Visual and hearing defects in cerebral palsy

o. Psychological factors in convulsive seizures

p. Allergies

q. Nutrition and fluid balance

r. Educability of the cerebral palsied child

s. Psychological problems of the cerebral palsied child and adult

t. Family life adjustment to the multiple problems of the cerebral palsied with appropriate supportive services

u. Factors causing developmental defects in the nervous system

v. Development of instruments to study normal fetal environment and abnormalities thereof.

XII. WHAT ARE THE GOALS IN PROGRAM PLANNING IN THE FIGHT AGAINST CEREBRAL PALSY?

1. Personnel training: Special training of medical and allied personnel (including doctors, nurses, therapists, psychologists, educators, social workers, vocational and recreational specialists) is needed to meet the growing demand for cerebral palsy treatment and extended services, throughout the United States.

A long-range goal should be the inclusion of cerebral palsy training as part of the general curriculum at medical and professional schools, so that doctors, therapists, teachers, etc., may receive this as part of their basic training. Also, there is an indicated need for special post-graduate training in this field. (3)

United Cerebral Palsy awarded its first Clinical Professorship in Cerebral Palsy to Columbia University in 1962, its second to the University of California, Los Angeles, in 1965 and its third to the University of Kansas in 1966. (1)

2. New Facilities: Closer attention to the problem of cerebral palsy in many communities of the nation makes evident the need for improved and expanded facilities for the mentally deficient and those in need of lifetime care. Various types of facilities are needed in some areas, such as outpatient treatment centers; rehabilitation centers; clinic-schools; social and recreational programs; day care and development centers; information, referral and follow-up services; homemakers; vacation homes; meals-on-wheels; vocational guidance and job-placement programs; and services for children in sparsely populated rural areas. There is need for some centers that can integrate diagnosis, treatment, education, psychological guidance, research and the training of personnel. Services and facilities should always be based, of course, upon a survey of special needs in any given community, since they vary. (3)

3. Research and training projects: Performance of research and its support elsewhere is a continuing program of the National Institute of Neurological Diseases and Blindness, which also aids the preparation of investigators qualified to carry out research, as well as the United Cerebral Research and Educational Foundation, the Easter Seal Research Foundation and the Association for the Aid to Crippled Children.

XIII. WHAT ARE THE BASIC NEEDS IN THE FIGHT AGAINST CEREBRAL PALSY?

1. More funds for research, training and education in cerebral palsy are needed for the United Cerebral Palsy Associations, the National Society for Crippled Children and Adults, and other voluntary agencies interested in this disease.

2. More funds for research, training and education in cerebral palsy are needed for the National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service, which makes grants for research projects in this field. (4)

3. New treatments and methods of prevention must be found to aid the estimated 550,000 to 600,000 people in the United States who are afflicted with cerebral palsy.

XIV. DOES RESEARCH PAY OFF?

1. Yes - most decidedly. Because of medical research advances the overall national death rate from all causes has declined over 11% in the last 20 years alone (1944-64). (2)

To list some other examples:

a. With major assistance from Public Health Service grants, a method (multiple exchange blood transfusions) has been discovered for preventing kernicterus, a leading cause of infant death (approximately 1,000 deaths yearly) and of cerebral palsy. (4) Cerebral palsy from this cause has been reduced from 15% to less than 1%. (1)

b. The great research discovery of Fleming, Florey and Chain, penicillin, was distributed to hospitals in 1945 and generally throughout the United States in March, 1946. Since then death rates from various infectious diseases and conditions responding to antibiotic therapy have shown dramatic declines between 1944 and 1964 -- (2)

The death rate from	Has declined
Influenza	94%
Tuberculosis	89%
Appendicitis	83%
Syphilis	83%

c. With financial support in part from the Public Health Service, the faulty administration of oxygen to premature infants was discovered to be the cause of retrolental fibroplasia, which heretofore had been the prime cause of blindness in infants. (6)

d. As a result of the development and use of the new drugs for the treatment of mental patients, many states are reporting remarkably encouraging results. New York State reported a 113% increase in releases from state mental hospitals between 1955 and 1964. (7)

e. Between 1943 and 1964, the estimated average life expectancy increased from 63.3 years to 70.2 years -- a total of almost 7 years. (2)

f. In epilepsy, neurological research has developed the electroencephalograph for the diagnosis of epilepsy; in the field of chemotherapy, research has developed over 20 anti-convulsant drugs, which used alone or in combinations can help many epileptics to lead normal lives. (9)

2. Concentrated research in cerebral palsy and related fields will undoubtedly bring about better methods of treatment and eventual prevention of this dread condition. (4)

The virus causing German measles has been identified and vaccines are being attempted to try to prevent the birth of cerebral palsied infants resulting from the mother's having contracted German measles during her pregnancy.

Damaged nerve tissue can now be regrown with eventual implications for damaged brain cells; physical and psychological disability in the monkey as a result of oxygen lack at birth can now be ameliorated by chemical treatment.

New methods of determining the educational potential of a cerebral palsied child have been evolved with specific remedial measures adopted to each child; and new methods of psychotherapy for parents of cerebral palsied children have been developed which, in turn, will help the children themselves.

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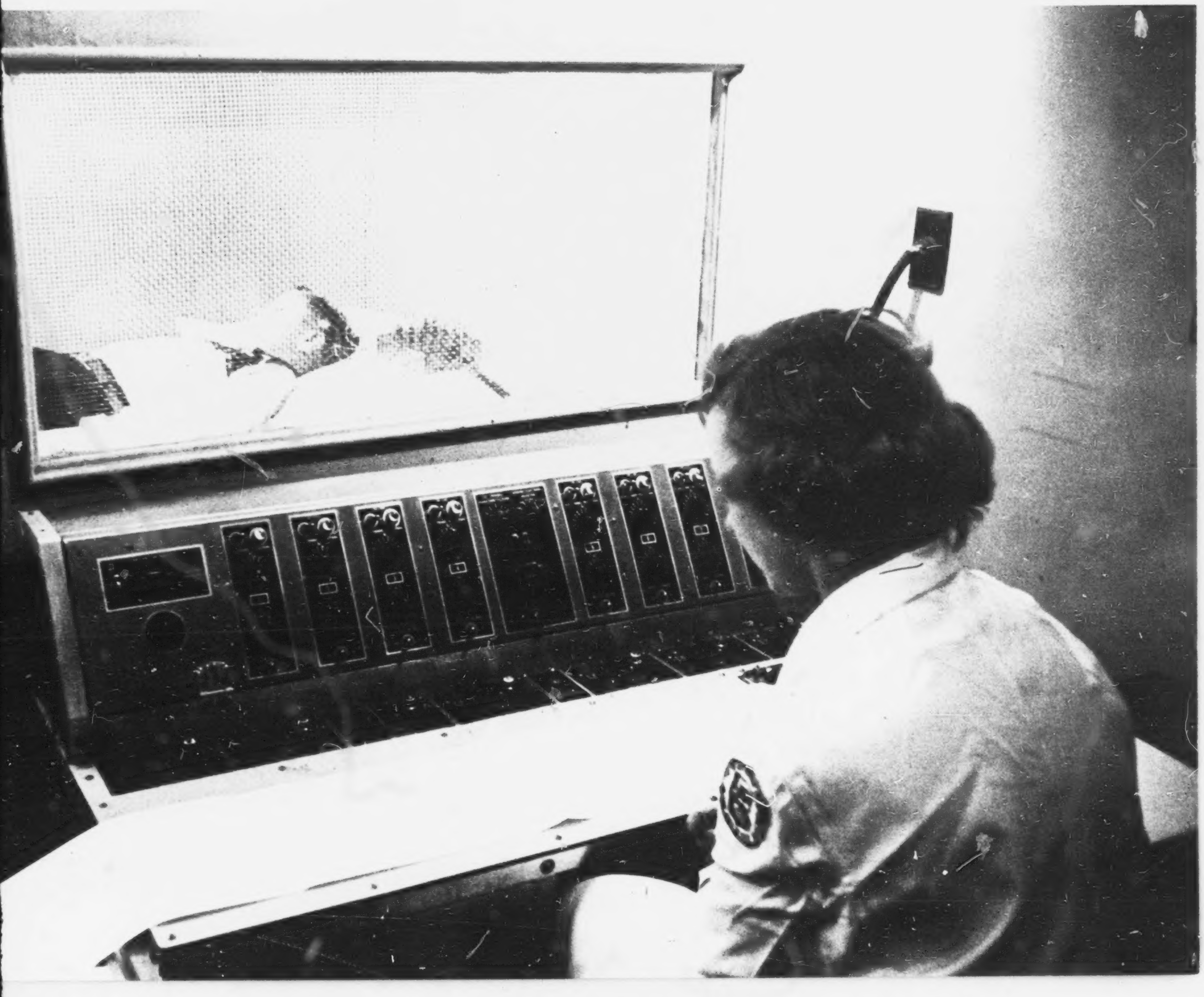
Photograph Page 10: Courtesy United Cerebral Palsy, Westchester, N.Y.

WHAT ARE THE FACTS ABOUT EPILEPSY?



EPILEPSY

WHAT ARE THE FACTS ABOUT EPILEPSY?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

I. WHAT IS EPILEPSY?

1. Epilepsy is a disorder of the nervous system. The word itself is derived from the Greek word for "seizure", the chief characteristic of this disorder. Epilepsy may be defined as recurrent loss or impairment of consciousness which may or may not be accompanied by muscular movements ranging from slight twitching of the eyelids to convulsive shaking of the entire body.

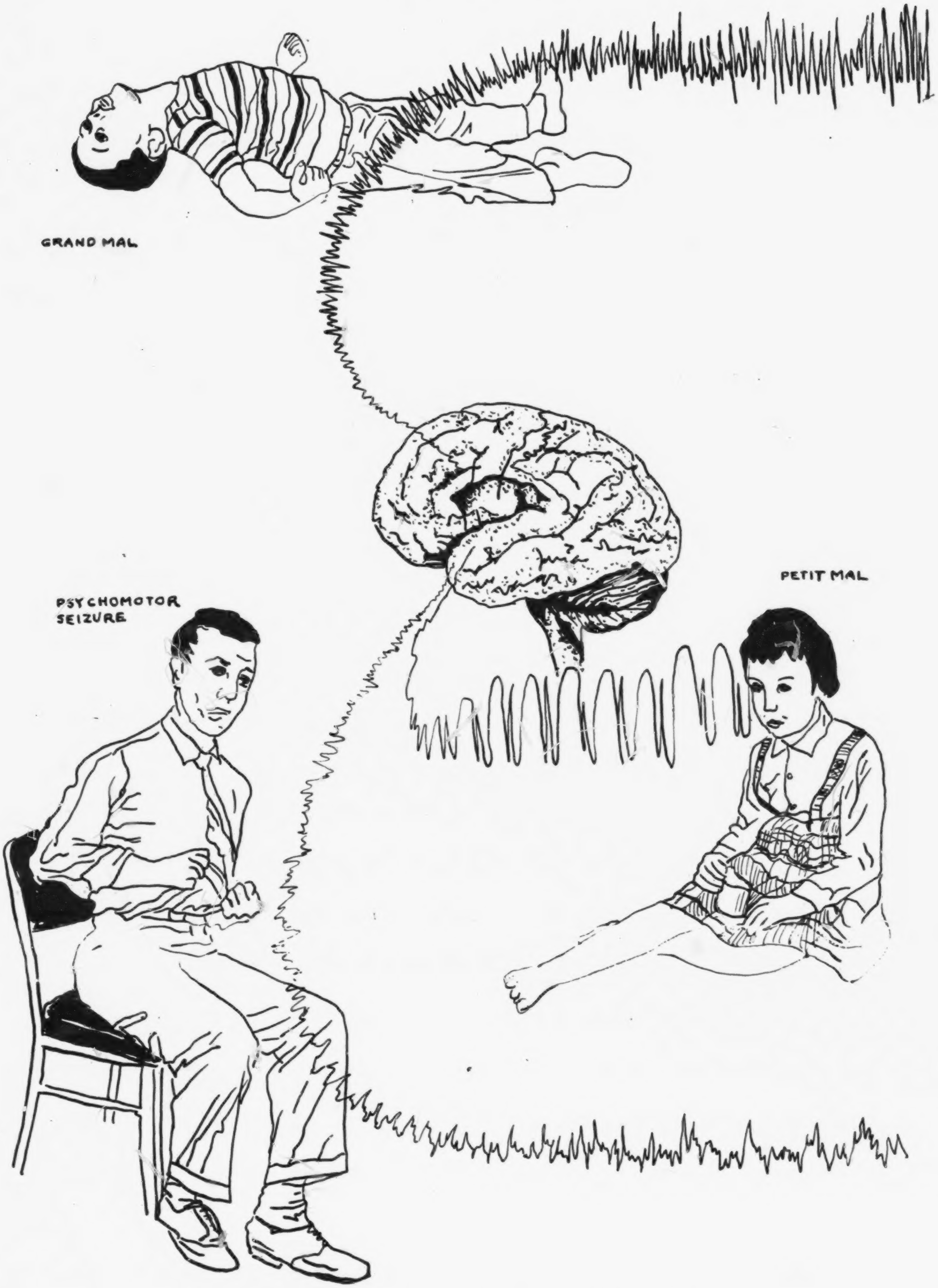
   Seizures may last from 10 to 30 seconds to a minute or two. The frequency of epileptic seizures can vary from one in a year or so, to several a day.

2. Epilepsy is classified from the standpoint of origin or from the standpoint of kind of seizure.

   Classification by origin:

   1. Idiopathic: All cases in which the origin of the seizures is unknown, that is, there is no demonstrable structural or pathological defect of the brain and nervous system. 75% of cases fall into this category. Idiopathic cases, however, are slowly becoming less in number as expanded research places more and more of them in classification 2 (below) -- symptomatic.
   2. Symptomatic: Includes all cases in which a definite organic cause for seizures has been demonstrated, such as a traumatic epilepsy caused by head injuries, following industrial accidents or war injuries.

   Classification by type of seizure:



Courtesy of "General Practitioner"

1. Grand mal: This attack, the most frequently found, consists of loss of consciousness, tightening of muscles, and falling to the ground, followed by convulsive movements.
2. Petit mal: This consists of a momentary black-out, during which there may be brief staring or brief rhythmic twitching of the eyelids or other facial muscles. This is most frequently seen in children.
3. Psychomotor: In this form, the attacks consist of clouding of consciousness with automatic patterned movements often followed by brief periods of amnesia.

II. HOW MANY PERSONS DIE FROM OR ARE AFFECTED BY EPILEPSY?

1. Epilepsy per se is not a cause of death, nor is it a significant cause of accidents. (1) The tragedy is that epilepsy is usually a long-term chronic disease, with 80% of seizures starting in childhood or adolescence. However, epilepsy may begin even in old age.

   In 50% of the persons with epilepsy who receive modern medical treatment the disease is completely controllable. In another 30% of such cases control is partial; nevertheless, even these are fully employable so long as their occupations do not expose them or others to danger in case of an on-the-job seizure.
2. Approximately 2,000,000 persons throughout the country (1% of the population) suffer from this disorder.

3. During World War II, 21,631 service men were discharged from the Army and Navy because of epilepsy. (Large numbers of these had entered the service with the disorder; some did not know they had it; but others disguised the fact in the hope that somewhere they might be able to prove their usefulness.)

   Moreover, some of the draftees, particularly adolescents, during the war developed the disease who might have done so in civilian pursuits. Others became epileptic because of war-contracted infectious diseases or from head injuries.

III. WHAT ARE SOME OF THE CAUSES OF EPILEPSY?

1. The specific cause of epilepsy is not known, although in general, it is ascribed to a disorder of brain cell metabolism.
2. Injuries to the infant prior, during or after birth; severe head injury or brain tumor; certain common infections which can settle in the brain, such as the organisms which cause sleeping sickness, measles, meningitis or whooping cough - all these may result in certain forms of epilepsy.
3. For a large number of epileptics (75%) there seems to be no precipitating cause, this is called idiopathic epilepsy (see Question I). Persons with this form seem to have a predisposition to seizure for reasons still undiscovered.
4. Medical opinion is divided as to the extent to which the genetic factor

may cause epilepsy. Most geneticists do not classify epilepsy as genetic, though there has lately been somewhat greater evidence that at least one type, petit mal, may be genetic in origin.

IV. DO WE HAVE ANY TREATMENT FOR EPILEPSY?

1. Drugs have been developed which can wholly or partially control epileptic seizures in some 80% of the cases; however, less than 50% receive such treatment.
2. Over 20 anti-convulsant drugs can control seizures including: Phenobarbital, Diphenylhydantoin sodium (Dilantin sodium), Tridione, Paradione, Mesantoin, Phenurone, Mysoline, Mebaral, Celontin, Milontin, Zarontin, Diamox, bromides, etc. (4)

   Some of these drugs in combination are more effective than when used alone. Each patient must be studied individually and given various drug trials over a period of time.
3. These anti-convulsants in most cases are effective enough so that the epileptic can assume the responsibilities of the ordinarily healthy person (assuming the work he does would not endanger himself and others in event of seizure.)
4. Techniques now available for the surgical removal of the damaged area of the brain have proved useful in the control of certain seizures in a few carefully selected patients.

   However, such operations are extremely few. Out of the 5% of today's epileptics medically considered for such operations, only about 2% of this 5% are actually operated upon.

V. WHY DO LESS THAN 50% OF ALL EPILEPTICS RECEIVE EFFECTIVE TREATMENT?

1. Both the sufferer and the public associate this with mental abnormality; and in some communities the epileptic is also shunned because of the "evil" long associated with these diseases. The sufferer from epilepsy, therefore, hesitates to make his disability known by seeking medical aid.
2. Public laws in some states make it difficult for the epileptic to get a job, receive an education, get married, and have children. Working compensation laws which exclude epileptics make it difficult to hire the epileptic and even enlightened employers are reluctant to hire epileptics in safe positions. Schools and universities have the same problem, apart from their personal prejudices against the disorder. (2)
3. The 1965 U.S. Immigration Act, which became effective in December of that year, permits persons with epilepsy to enter the country on visa (including for purpose of treatment, formerly denied) or with the intention of citizenship. No longer are they classified with the insane, criminal and morally depraved.
4. There are not enough specialists who are capable of adequately diag-

nosing the disorder and treating it.

VI. HOW MUCH IS BEING SPENT FOR RESEARCH INTO THE CAUSES, TREATMENT AND PREVENTION OF EPILEPSY?

1. The National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service is supporting or conducting research into the causes and treatment of this disorder in the amount of $3,372,790 in fiscal 1965. Of this amount, $1,041,000 was expended within the Institute on epilepsy research.

   In contrast, it is estimated epilepsy costs incalculable millions of dollars to the American economy to care for the public institutionalized epileptics, plus those thousands depending upon non-institutional public assistance or who are maintained by relatives in private institutions. The majority who live outside institutions are supported by their families.

VII. HOW MANY NEUROLOGISTS ARE THERE IN THE UNITED STATES?

1. There are only about 350 qualified neurologists in the United States actively engaged in the practice of this discipline.
2. Of the 88 four-year medical schools in the Nation (including Puerto Rico) regarded as Class A by the American Medical Association, approximately 40 have the facilities and teaching staff necessary to

train personnel in this field.

3. The National Institute of Neurological Diseases and Blindness received appropriations totaling $17,757,000 for training in fiscal 1966. These funds aided graduate preparation of neurologists, ophthalmologists, otolaryngologists, and basic scientists in neurological fields.
4. Only small support for specialized training of medical practitioners in the diagnosis and treatment of epilepsy is available at present.

VIII. ARE THERE ANY EPILEPSY CLINICS IN THE UNITED STATES?

1. A number of states and universities have set up epilepsy clinics chiefly in the larger medical centers. There are now excellent epilepsy treatment centers at the Presbyterian Hospital in New York City; at Johns Hopkins in Baltimore; at the Univerity of Virginia; the Jerry Price Memorial Clinic at the University of California in Los Angeles; the Michigan Epilepsy Center, Detroit; at the University of Wisconsin Medical School; the Consultation Clinic for Epilepsy, University of Illinois College of Medicine; and many others.

IX. WHAT MUST BE DONE TO HELP THE EPILEPTIC ASSUME A NORMAL LIFE?

1. Research must be expanded both to bring about a permanent control and to improve present treatment so that all seizures can be brought

under complete control. (3)

2. Support for neurological training in the nation's medical schools must be expanded so that more specialists (neurologists) may be developed and more general practitioners will learn methods of handling this disorder.
3. Clinics must be established at key points throughout the country where practitioners can receive training for handling this problem thus shortening the gap between modern medical discovery and patient care.
4. Great effort must be expended at the community level to rehabilitate and employ the epileptic. From the progressive, informed employer's viewpoint, 80% of all epileptics are considered "controlled", and can be counted on for reliable work performance. Nevertheless, the vast majority of employers are scarcely better informed in this regard than the general public. This is startlingly borne out by the fact that epileptics effectively rehabilitated by the U.S. Office of Vocational Rehabilitation comprise a bottom 2% of all rehabilitants.
5. The general public must be informed about epilepsy. Facts must replace myths, fiction. Laws must be updated so they help integrate the epileptic into the community. Laws must be made to require the admission of controlled epileptics into schools and colleges. Restrictive legislation in regard to marriage, sterilization, drivers' licenses, workmen's compensation -- still prevalent in some states -- must be repealed or greatly liberalized.
6. Para-medical groups such as nurses, psychologists, social workers,

rehabilitation counsellors must be educated as to modern findings and techniques in regard to epilepsy.

7. Two national voluntary health agencies are working toward a better understanding of epilepsy and in some States have successfully worked toward better legislation for the epileptic, but the seriousness of the present need indicates a continuing program.

These voluntary health agencies are:

Epilepsy Association of America
111 West 57th Street
New York, New York 10019

The Epilepsy Foundation
1419 H Street, N.W.
Washington, D.C. 20005

A professional national association is:

American Epilepsy Society
Eli S. Goldensohn, M.D., Secretary
University Hospital
Department of Neurology
3400 Spruce Street
Philadelphia, Pennsylvania

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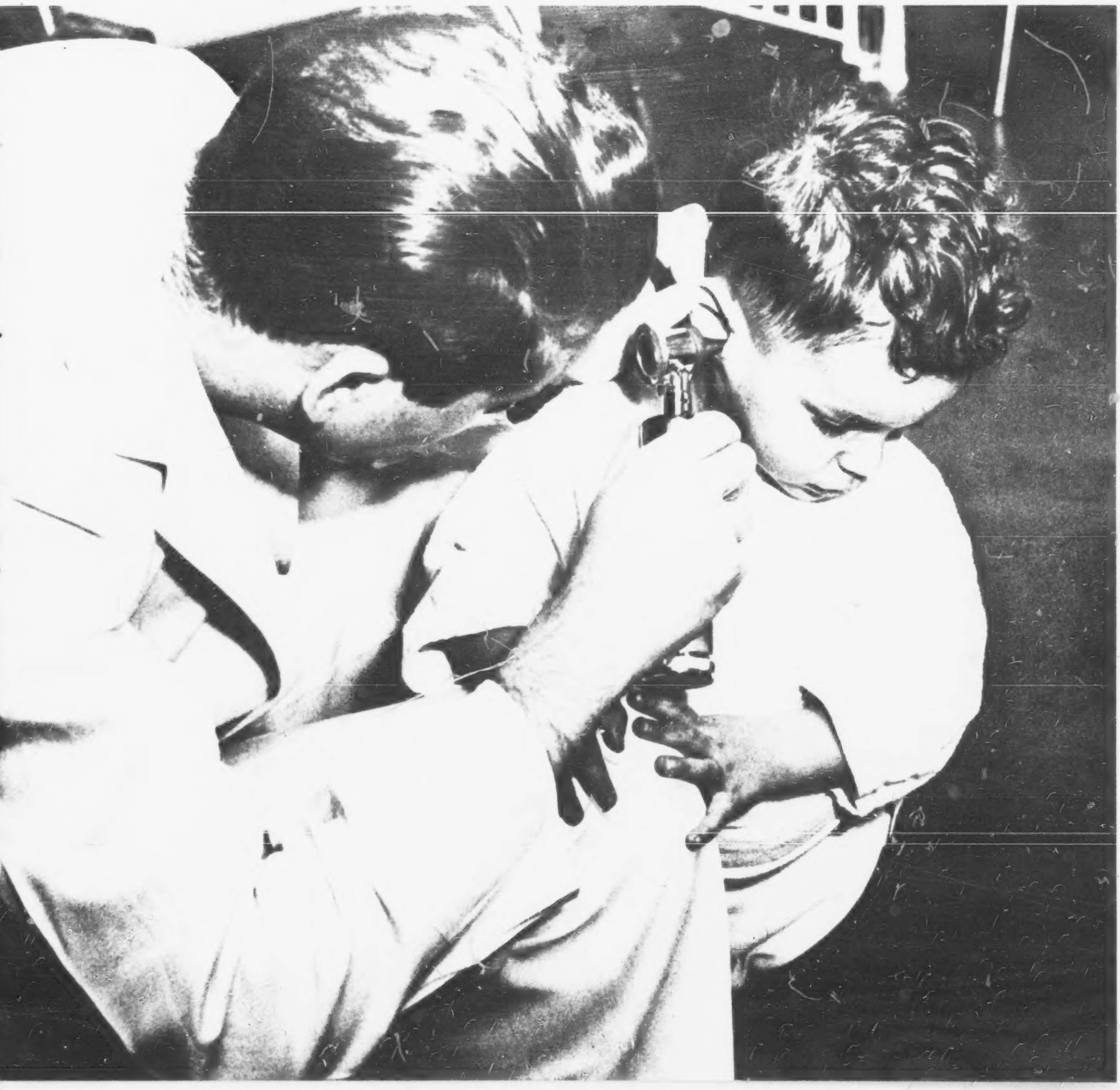
(3) "Epilepsy, Hope through Research" - a pamphlet for the public prepared by the National Institute of Neurological Diseases and Blindness, National Institutes of Health, U.S. Public Health Service, Bethesda, Maryland, 20014. Also available in Spanish.

(4) Personal communication, January 26, 1966, from Louis D. Boshes, M.D., Director, Consultation Clinic, Neuropsychiatric Institute, University of Illinois, College of Medicine, Chicago, Illinois.

Grateful acknowledgement is made in the compilation and revision of this fact sheet to the National Institute of Neurological Diseases and Blindness, U.S. Public Health Service, Bethesda, Maryland 20014; and the Epilepsy Association of America, 111 West 57th Street, New York, New York 10019.

WHAT ARE THE FACTS ABOUT

DEAFNESS?



WHAT ARE THE FACTS ABOUT
DEAFNESS
IN THE UNITED STATES TODAY?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

WHAT ARE THE FACTS ABOUT DEAFNESS IN THE UNITED STATES TODAY?

I. HOW MANY PEOPLE ARE TOTALLY DEAF IN THE U.S. TODAY?

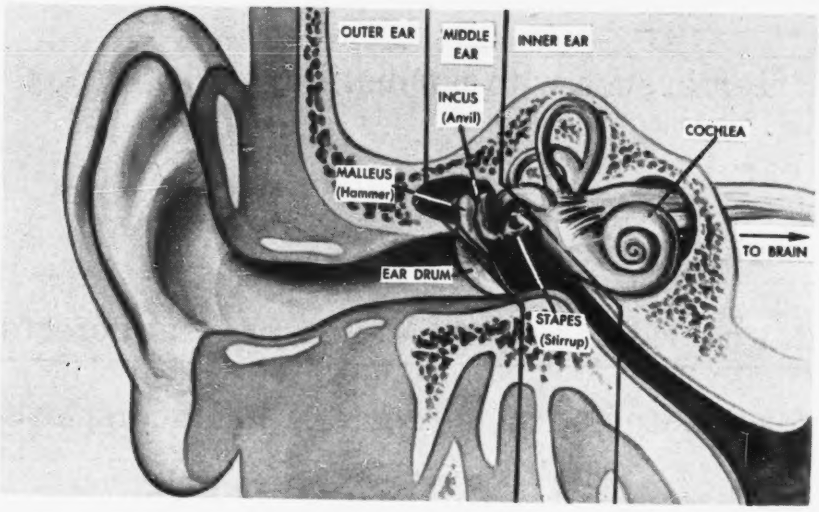
1. 225,000 Americans are so deaf that they cannot hear human speech, approximately the population of the State of Alaska. (1)

II. HOW MANY PEOPLE ARE PARTIALLY DEAF?

1. One of every 10 people have some degree of hearing loss, an estimated 20,000,000 Americans.
2. The incidence of hearing loss is increasing in this country in spite of efforts to control it. (1)

III. WHAT AGE GROUPS HAVE HEARING LOSSES?

1. More and more premature children survive a stormy early life as a result of improved pediatric practices. The incidence of hearing problems in premature children is nearly seven times that found in normal full term deliveries.
2. The increasing age of our population is probably the greatest single factor for the increased incidence of hearing loss. People developing the sclerotic changes of old age have a far higher incidence of sensory neural deafness than people in the younger groups. The degree of hearing loss seems proportional to the degree of the aging process. (1)



IV. WHAT IS DEAFNESS?

1. Hearing loss is generally broken down into two major categories:
    a. Middle ear or conductive hearing loss;
    b. Sensory-neural hearing loss, which includes injuries to the auditory neural pathways from the end organ of the auditory nerve in the inner ear to the auditory cortex in the temporal lobe of the brain.
2. Many people suffer from combinations of middle ear and sensory-neural deafness. (2)

V. WHAT TYPES OF HEARING LOSS ARE MOST PREVALENT?

The most prevalent types of hearing loss according to the causes are:

1. Conductive hearing loss
    a. Eustachian tube disfunction usually associated with adenoid growth, which results in middle ear infections and conductive hearing loss, and infections accompanied by high fever due to childhood diseases.

b. Bony abnormalities – otosclerosis (a bone proliferation which causes interference with normal movement of the bones of the middle ear.)

2. Sensory-neural hearing loss

   a. Paranatal neural damage or developmental defects:

      (a) Erythroblastosis, as a result of Rh incompatibility (a blood condition caused by incompatibility between the mother's and the unborn infant's blood, which results in destruction of the infant's red blood cells and deposit of blood pigments in the infant tissues);

      (b) Ultravirus infections of the mother during the first trimester of pregnancy, or overwhelming infections of the new born infant by the same ultra-viruses;

      (c) Anoxia at the time of delivery;

      (d) Brain trauma at the time of delivery. (2)

   b. Aging process and vascular degenerative changes.

   c. The effects of some drugs.

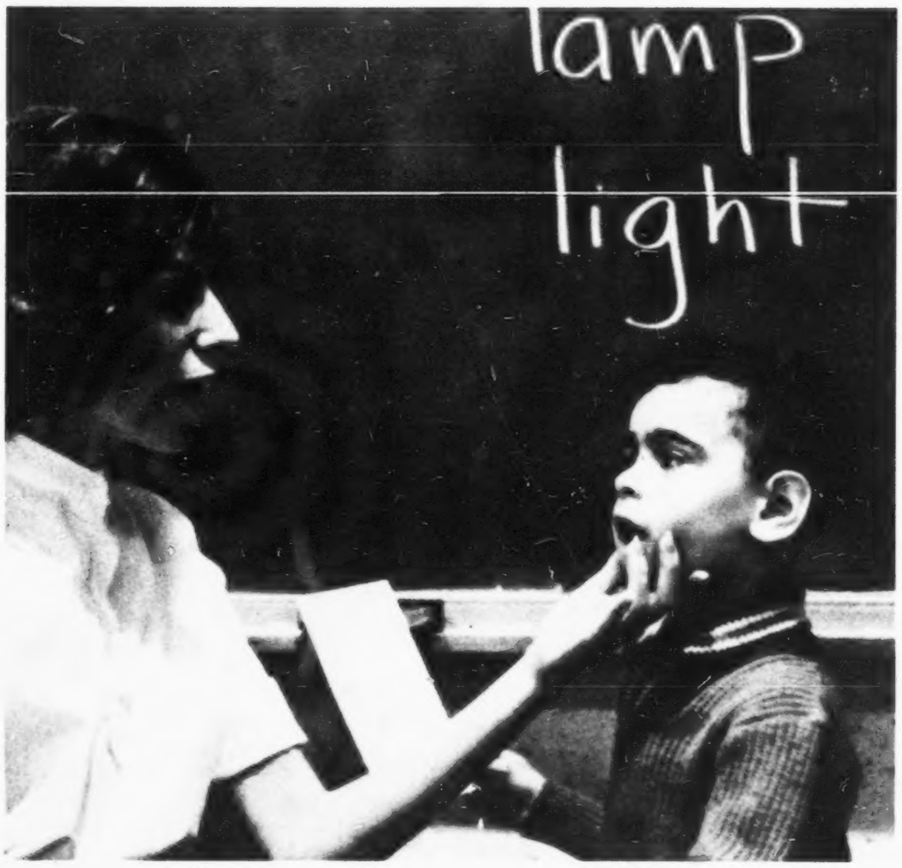
   d. Prolonged exposure to excessive noise.

VI. AT WHAT AGES DO THESE DISORDERS OCCUR?

1. Sensory-neural and central hearing loss occurs at the beginning and toward the end of life. It is associated with the dangers of being brought into the world or the degenerative changes of old age.

2. The conductive or middle ear deafness usually first appears around early school age when children are subjected to upper respiratory infections.

   Bone diseases, such as otosclerosis and osteogenesis imperfections, begin to cause hearing loss in late puberty and may damage hearing even as late as 50 years of age. (2)



A child with impaired hearing is being taught to speak properly. The therapist is showing the youngster the proper positioning of the tongue, teeth and lips for the production of certain sounds.

VII. HOW MANY DOCTORS SPECIALIZE IN EAR DISEASES?

An estimated 5,961 doctors are specialists in ear, nose and throat problems. (3)

VIII. HOW MANY DOCTORS DO WE NEED IN THE FIELD?

If this number could be increased to 7,000 certified specialists we would have only one otolaryngologist for every 25,000 people in this country. Such a ratio would represent the minimal needs for the proper care of the population's hearing problems.

200 young doctors a year are being qualified in the specialty of Otolaryngology. This number just about matches the number of first year residency training positions open, so in order to reach the necessary goal, it is imperative that more young men be recruited into this specialty. (3)

IX. HOW MANY MEDICAL SCHOOLS GIVE TRAINING IN THIS FIELD?

At the present time 22% of university medical schools do not even have a training program in Otolaryngology. Many of the present training programs are weak because of:

1. Lack of proper recognition of this specialty in the curriculum of many medical institutions. (4)
2. Lack of funds to support the necessary teaching personnel. (4)
3. Lack of funds to develop research in this specialty. (4)

X. HOW MUCH IS BEING SPENT BY THE GOVERNMENT FOR TRAINING GRANTS AND TRAINEESHIPS IN OTOLARYNGOLOGY?

An estimated $4,274,350, as follows:

1. About $2,780,100 has been made available by the National Institute of Neurological Diseases and Blindness in fiscal 1965 to support training in otolaryngology, for the development of teachers and research workers in the field.

2. An additional $370,250 will be spent by the National Institute of Neurological Diseases and Blindness in fiscal 1965 to support fellowships and career teachers in otolaryngology.

3. In fiscal 1965, the National Institute of Neurological Diseases and Blindness supported 46 training grants, and 286 special trainee grants. In addition, career awards were provided for young teachers audiologists, otolaryngologists, and basic scientists in speech and hearing. (5)

4. The Bureau of State Services in fiscal 1967 will spend $580,000 in grants to institutions to train 44 persons in speech and hearing therapy and $20,000 to train 2 physicians in otolaryngology. (11)

5. The Division of Community Health Service of the Bureau of State Services will be spending in student aid, $494,000 to train 86 persons in speech and hearing therapy, and $30,000 to begin training 3 physicians in otolaryngology. (11)

6. The Children's Bureau and the Vocational Rehabilitation Administration also support training of ancillary personnel. (5)

XI. HOW MUCH MONEY IS AVAILABLE FOR RESEARCH TO PREVENT HEARING LOSS IN THE UNITED STATES?

A total of about $6.3 million, as follows:

1. In the fiscal year 1965 the National Institute of Neurological Diseases and Blindness will spend an estimated $5,395,600 for research in human communication.

   a. This sum is in support of 188 research projects and four research centers. The latter are located at the University of Chicago, Central Institute for the Deaf, St. Louis, Princeton University, and the University of Michigan.

   b. The principal fields of research now being supported are:

      (1) neuro-physiological studies directed toward the auditory pathways and vestibular (organ of balance) pathways;

      (2) neuro-anatomy of the hearing pathways;

      (3) histochemical studies relating to the bone disorders and also to the auditory neuropathways;

      (4) the pathology of the temporal bone;

      (5) neuropathology;

      (6) electronmicroscopy of the sensory cells;

      (7) study of hearing tests and new case finding techniques;

      (8) research in surgery to restore hearing.

2. About a million dollars a year is being contributed from non-government sources for research in hearing. This is far less than is needed. (5)

XII. WHAT IS DEAFNESS COSTING THE VETERANS ADMINISTRATION?

1. Approximately $45,000,000 per annum is spent for compensation as a result of hearing impairment. There are currently 90,000 to 95,000 individuals receiving compensation, of which 10,000 are classified as suffering from "ear disease".
2. $630,000 is spent yearly to distribute 4,500 to 5,000 hearing aids by the Veterans Administration.
3. The cost of rehabilitation and retraining of these individuals is not presently available. (6)

XIII. HAS MEDICAL RESEARCH IN DEAFNESS PAID OFF? YES! (2) (8)

1. The greatest dividend to date lies in the microsurgery (tympanoplasty) that has been developed to restore hearing to those individuals suffering from middle ear (conductive) deafness and mastoid infection.
2. Through the years improved techniques have been developed not only for the surgical but also for medical treatment of chronically infected mastoids and middle ears. Infected mastoids are dramatically reduced by the use of antibiotics.
3. In 1940, the fenestration operation to create a new communication into the inner ear was perfected for relief of deafness caused by otosclerosis. This operation has been almost superseded by stapedectomy (removal of the stapes bone which is embedded in the otosclerotic proliferation in the middle ear and the substitution of a metal, bone,

or plastic connection between the inner ear and the two remaining middle ear bones.)

This operation not only gives a high percentage of recovery, but also gives an exceptionally high return of the hearing function. (2)

4. Recently advances have been made in the surgery for the correction of congenitally malformed external ear canals and middle ears in order to restore hearing and to remove tumors along the auditory nerve.
5. Recent research has aided in identifying (a) various viruses, such as the ultra viruses, which cause infectious diseases resulting in communicative disorders, and (b) the identification of certain drugs causing auditory damage. (8)
6. Techniques for minimizing the effects of erythroblastosis (as a result of Rh incompatibility) have been developed.
7. New vaccines have been developed to protect pregnant mothers from some of the childhood diseases. (2)
8. New operative approaches to auditory nerve tumors have been developed. (8)

XIV. WHAT OTHER ADVANCES HAVE BEEN MADE AGAINST DEAFNESS?

1. New techniques for the examination of young children of pre-school age have been developed as well as tests to determine the location of sensory-neural damage causing hearing impairment.
2. In industry much has been learned concerning the control of noise

hazards causing temporary or permanent hearing impairment.

3. In the field of basic research, the number of temporal bone banks has increased to 41. Here collaborative studies are carried out on the lesions found in temporal bones compared with studies carried out on the same individuals during life.

   There are now four regional Temporal Bone Banks Centers, established by the Deafness Research Foundation, to coordinate the acquisition, distribution, and medical documentation of the bequeathed ear structures following the death of the donor. (8)

4. Many basic studies have been undertaken on the vestibular system which permit earlier diagnosis of brain tumors involving the temporal bone and auditory nerve. Neuroanotomical studies are being carried out to learn more about the efferent pathways related to hearing. (2)

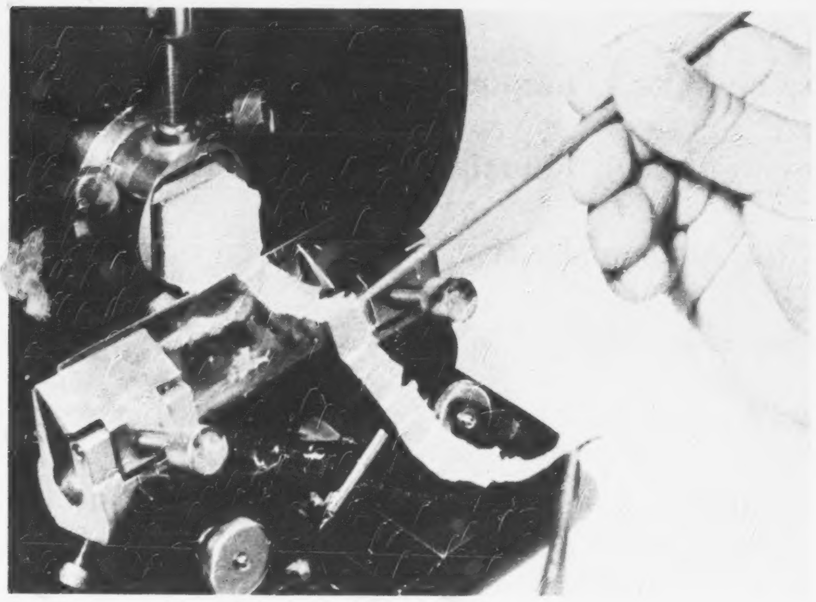
XV. WHAT ARE SOME IMPORTANT RESEARCH LEADS?

Research must be encouraged and fostered that will produce a far greater knowledge of the essential nature of deafness, particularly sensory-neural deafness. In human communication all too little is known about speech or the basic lesions causing aphasia. It is fair to say that we do not yet know how we hear. Some important leads are:

1. The study of the anatomy and the microanatomy of the auditory pathways.
2. What happens to a sound stimulus as it travels from the inner ear up

to the auditory cortex of the brain?

3. The neuropathology of the central auditory pathways.
4. More must be learned concerning oxygen deprivation, and specific diseases in relation to deafness. (2)



A section of the temporal bone — hardest in the human body — is cut to exacting specifications on the microtome at Columbia Presbyterian Medical Center in preparation for laboratory study.

XVI. WHAT CAN BE DONE TO REDUCE THE INCIDENCE OF HEARING IMPAIRMENT?

1. Broad public health programs and privately supported programs of case finding must be established to identify individuals with early hearing impairment so that they may be benefited by early measures to control or cure the hearing loss. Such programs should extend from the maternal and child health clinics through the school systems into the industrial plants and finally into health programs for the elderly. (7)

2. Paranatal clinics should attempt to:
    a. Reduce the incidence of prenatal virus infection.
    b. Establish better control of the problems of erythroblastosis and oxygen deprivation.
    c. Provide obstetrical techniques to help prevent children from receiving injuries at birth which will lead to hearing handicaps. (7)

XVII. WHAT SOURCES OF SUPPORT ARE AVAILABLE?

1. The crippled children's clinics supported by the Children's Bureau, of the U.S. Public Health Service, Department of Health, Education & Welfare support in many instances Conservation of Hearing Clinics. In Maryland in 1959 some 10,000 children of all categories entered the program. More than 6,000 of them suffered from communicative disorders.
2. The Division of Community Health Service of the Bureau of State Services is currently spending $530,000 in grants for community services in the communicative disorders (specifically, neurological and sensory). (11)
3. Some Foundations support research in deafness.
4. The national voluntary agencies serving those with hearing and speech problems are:
    a. The American Hearing Society which supports community care through its affiliated chapters sometimes identified as Leagues for the Hard of Hearing; (9)

b. The National Society for Crippled Children and Adults; (9)

c. United Cerebral Palsy Association of America; (9)

d. The American Speech and Hearing Association is a national organization setting and maintaining standards for professional workers in the field. (9)

e. The National Association of the Deaf is the largest of the national membership bodies serving the profoundly deaf; (9)

f. The Alexander Graham Bell Association for the Deaf serves as an international information center about deafness for professionals and parents of deaf children. Its emphasis is on the educational needs of deaf children and specifically on the teaching of speech, lipreading and the use of residual hearing. (10)

g. The Deafness Research Foundation is the only national voluntary health agency devoted primarily to advancing ear research. In addition to its broad program of research in all forms of ear disorders, the Foundation sponsors the Temporal Bone Banks Program for Ear Research in cooperation with the American Academy of Ophthalmology and Otolaryngology and the Armed Forces Institute of Pathology. There are now 41 Temporal Bone "Banks" (ear research laboratories) throughout the country participating in the Program. Because the inner ear structures, contained in the temporal bones, cannot be examined during life, the determination of many causes of inner ear disorder can be made only through laboratory studies of these structures after death. The Foundation is conducting an accelerated public education program financed by the John A. Hartford Foundation to encourage those with all types of ear disorders to bequeath their temporal bones to advance otologic research. (8)

5. In addition to these agencies, Gallaudet College in Washington, D.C. is the nation's only college for the deaf with an enrollment of students from all over the United States and many foreign countries. (8)

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CREDITS

Cover: Courtesy Deafness Research Foundation.
Page 2: Today's Health.
Page 4: Manhattan Eye, Ear and Throat Hospital.
Page 11: Deafness Research Foundation.

WHAT ARE THE FACTS ABOUT
MULTIPLE SCLEROSIS?

WHAT ARE THE FACTS ABOUT MULTIPLE SCLEROSIS?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

I. WHAT IS MULTIPLE SCLEROSIS?

1. Multiple sclerosis is a chronic, usually progressive and crippling neurological disease striking chiefly persons between 20 and 40 years of age. Its cause remains obscure.

   It is typically slow and insidious in onset, frequently difficult of diagnosis until symptoms have progressed to the point of extensive disability. There is no specific diagnostic test for multiple sclerosis. (1)

2. In multiple sclerosis one finds many areas in the brain and spinal cord, scattered indiscriminately throughout the central nervous system, in which myelin (a fatty sheath which in normal healthy individuals covers the nerve fibers) has been dissolved or destroyed. This destructive process is called "demyelination". (2)

3. The process by which this dissolution or destruction is accomplished is not known, but it causes either complete stoppage of these nerve impulses - thus producing paralysis of the parts of the body innervated by these nerves - or the impulses pass through the affected nerves either enfeebled or altered, so that those parts of the body innervated by such nerves perform their functions in a disturbed fashion. (3)

4. Symptoms: Double vision, staggering and inability to keep one's balance, numbness of parts of the body, tremor, nystagmus

(involuntary movements of the eyeball), extreme weakness, speech difficulties, emotional disturbances, bladder troubles - these are common symptoms. (3)

II. HOW MANY PEOPLE ARE SUFFERING FROM MULTIPLE SCLEROSIS AND RELATED DEMYELINATING DISEASES IN THE U.S.?

1. With the present status of medical knowledge no figure can be given or even estimated with any degree of accuracy as to the number of people suffering from multiple sclerosis and related demyelinating diseases in the United States. An estimate would be well over 500,000, of which number an estimated 250,000 suffer from multiple sclerosis. (1) It is a disease frequently of extremely difficult early diagnosis, and thousands of cases are thus missed. (3)

   The other demyelinating diseases include Diffuse Sclerosis, Schilder's Disease, Acute Disseminating Encephalomyelitis, Balo's Disease, Neuromyelitis Optica, Metachromatic Encephalopathies, Post-Infectious Encephalomyelitis, Acute Allergic Encephalomyelitis, Amyotrophic Lateral Sclerosis. (3)

2. Multiple sclerosis is a crippler, usually not a killer, although occasionally instances occur in which the course of the disease is rapidly fatal. Due to weakening disabilities, the multiple sclerosis patient is more apt to be susceptible to intercurrent infections and disorders. (3)

III. WHAT IS BEING DONE TO HELP MULTIPLE SCLEROSIS SUFFERERS?

Multiple sclerosis was largely a neglected area until the advent of the National Multiple Sclerosis Society.

1. With the recognition that no specific treatment is available for multiple sclerosis, stress has been and is being placed on research to develop information as to the cause of multiple sclerosis so that a rational approach can be made to therapy. (3)

2. Although the medical profession is not yet able to treat multiple sclerosis, per se, the patient can and should receive careful, sympathetic, intelligent medical management directed toward protection of the patient from noxious influences, maintenance of the highest possible degree of general health and amelioration of symptoms, including rehabilitative measures when indicated. (3)

3. Fifty-two chapters of the National Multiple Sclerosis Society are now sponsoring special clinics or clinical programs for out-patient care of multiple sclerosis patients. Many other clinics are established within the out-patient neurological services of medical schools and teaching hospitals. (3)

4. However, all these are vastly inadequate to the real need. If the National Multiple Sclerosis Society were to attempt an adequate program for all multiple sclerosis patients of the nation, support at the level of perhaps $200 million a year would be required. (3)

IV. HOW MUCH MONEY IS BEING SPENT FOR RESEARCH TO FIND TREATMENTS AND CURES FOR MULTIPLE SCLEROSIS?

1. About $3,603,670 was being spent in 1965 for research in this area, as follows:
   a. Government Funds: $2,953,000

      The National Institute of Neurological Diseases and Blindness, U.S. Public Health Service, spent in fiscal 1965, $2,953,000 for research projects dealing specifically with multiple sclerosis and its related demyelinating diseases. (4) Of this total, the Institute spent intramurally (in its own research laboratories) approximately $501,000 for multiple sclerosis or closely related research. (4)

   b. Non-Government Funds: $650,670

      The National Multiple Sclerosis Society has spent $5,372,182 during the period 1947-1965 for research in multiple sclerosis, of which $650,670 was spent in 1965. (3)

V. HOW DOES THIS COMPARE WITH WHAT WE SPEND ON OTHER RESEARCH?

1. In contrast with the total of about $3,603,670 being spent during 1965 for research in the field of multiple sclerosis:
   a. The Fish and Wildlife Service of the Department of the Interior will spend an estimated $98 million in fiscal 1966 in conducting

research and management programs to conserve fish and wildlife resources for recreational and commercial use. (5)

b. In 1964, the American public spent:

$212,260,000 for hair spray fixatives. (6)
$ 59,270,000 for hand lotions and creams. (6)
$ 30,020,000 for playing cards. (6)

VI. HOW MUCH IS THE GOVERNMENT SPENDING FOR THE ESTABLISHMENT OF MULTIPLE SCLEROSIS CLINICS AND SERVICES?

1. The Federal Government is doing nothing about establishment of multiple sclerosis clinics and services at this time, except for the inclusion of multiple sclerosis research at the Clinical Center of the National Institutes of Health, U.S. Public Health Service in Bethesda, Maryland. (4)

   a. However, the Veterans Administration does admit patients suffering from multiple sclerosis to its facilities and maintains clinics for multiple sclerosis patients. The National Multiple Sclerosis Society maintains a close and effective liaison with these Veterans Administration facilities. (3)

   b. The Vocational Rehabilitation Administration is showing increasing concern for rehabilitative care of multiple sclerosis patients.

2. The state and city health departments are doing nothing about establishment of multiple sclerosis clinics and services.

VII. HOW MANY DOCTORS SPECIALIZE IN MULTIPLE SCLEROSIS?

1. There is no separate specialty in multiple sclerosis recognized by the certifying American Boards. However, many prominent neurologists have developed a keen interest in multiple sclerosis and its allied neurological problems.

   Increase of the limited number of qualified neurologists is a major goal of the National Institute of Neurological Diseases and Blindness. Only about 350 qualified neurologists were actively engaged in practice in 1965. The Institute has received appropriations totaling $18 million in fiscal 1966 for training. (4)

2. More basic and clinical research is now being conducted in various university medical centers and the results of this research are appearing in greater number in medical publications.

3. In an effort to meet the urgent need for well-trained scientists interested in the field of investigations concerned with the problem of multiple sclerosis, the National Multiple Sclerosis Society sponsors a research fellowship program which is aimed at the support of post-doctoral candidates who are interested in obtaining advanced training in scientific disciplinary areas presumably related to multiple sclerosis to become better equipped for independent research. This support may be granted to candidates for fundamental as well as applied types of training and is intended to make it possible for the candidate to undertake a career in academic medicine concerned, at least in part, with multiple sclerosis and related neurological dis-

orders. During 1965 the Society spent $54,230 on fellowships. Since the inception of the program in 1955 through 1965, the Society has awarded fellowship grants totaling $623,359. (3)

The Society sponsors a summer program for medical students intended to lead them toward careers in neurological research. The above fellowships cost figure includes seven of these junior fellows ($700 each). (3)

VIII. HOW ARE THE KNOWN CASES OF MULTIPLE SCLEROSIS APPORTIONED AS TO AGE GROUPS?

1. Multiple sclerosis is a disease of young adults - about 2/3 of cases being diagnosed between the ages of 20 and 40. (3)
2. Appearance of symptoms before age 20 is seen in about 20% of cases. Onset after 50 is unusual. (3)

IX. WHAT ARE THE NEEDS IN THE FIGHT AGAINST MULTIPLE SCLEROSIS?

1. More funds for research, training and education in multiple sclerosis are needed for the National Multiple Sclerosis Society and other voluntary agencies interested in this disease.
2. More funds for research, training and education in multiple sclerosis are needed for the National Institute of Neurological Diseases and Blindness of the Public Health Service.

3. New treatments and cures must be found to aid the estimated 500,000 people in the United States afflicted with multiple sclerosis and related demyelinating diseases.

X. WHERE CAN DOCTORS AND LAYMEN GET INFORMATION REGARDING TREATMENT AND REHABILITATION OF MULTIPLE SCLEROSIS VICTIMS?

1. The National Multiple Sclerosis Society has published or reprinted and has available for distribution to physicians and properly qualified medical personnel, without charge, a number of comprehensive manuals and reprints, dealing with the various aspects of this disease. In addition there are manuals available to patients (only as prescribed by their physicians). These manuals are listed in Appendix I.
2. The National Multiple Sclerosis Society maintains a Central Multiple Sclerosis (Pathological) Registry at the Montefiore Hospital, New York City, under the direction of Dr. H. M. Zimmerman. (see Appendix I for additional information.)
3. Multiple Sclerosis Abstracts - a publication produced under contract with Excerpta Medica gathers the literature on multiple sclerosis from the world-wide journals of medicine and makes it available to libraries of medical schools and medical research institutions throughout the world as part of the Society's Professional Education Program.

XI. RESEARCH LEADS AND TRENDS IN MULTIPLE SCLEROSIS (3)

Important trends and areas recognized or considered to be important in research in multiple sclerosis:

1. Culminating the effort of many scientists over many years, success was reported in 1962 on the growth of brain cells in "test tubes." The cells will grow to apparent maturity and develop myelin. If a drop of blood serum from a multiple sclerosis patient is added to the culture, the myelin is destroyed in a few hours. If this contaminated culture medium is rinsed out of the brain cell culture and replaced with fresh medium, the myelin will regenerate. This is contrary to the generally held belief that myelin will not regrow and gives great hope in multiple sclerosis. More recently multiple sclerosis serum has been shown to block electric conductivity of the nerve fiber as well.

2. Further study of acute isoallergic encephalomyelitis in experimental animals and identification of the spcific antigen involved in this process.

3. The ultrastructures, chemistry and metabolism of myelin.

4. Studies of the process of myelination (the development of myelin) and demyelination (the dissolution of myelin).

5. The mechanism of exacerbations (relapses) and remissions in the multiple sclerosis process including the apparent induction of the exacerbations by physical and/or emotional trauma.

6. Exhaustive studies, through ultra-microchemical techniques, of biochemical differences between the cerebrospinal fluid, blood and appropriate other fluids and tissues of the multiple sclerosis patient as compared with the normal, this hopefully leading to clues as to cause of multiple sclerosis and/or a specific diagnostic test.

7. The continuation of epidemiological studies of multiple sclerosis dealing with such factors as incidence, prevalence, geographic and racial distribution and interpretation of the significance of differences found.

8. The possible role of allergy and the mechanism of induction of the hypothesized sensitivity.

9. Possible role of infectious agents in multiple sclerosis and of animal diseases having certain similarities.

10. General biochemical, nutritional, metabolic and physiological studies of the central nervous system in diseased state as compared with the normal.

11. Possible relationship of multiple sclerosis to collagen diseases.

12. The possible role of heredity in multiple sclerosis.

13. The role of enzyme systems in multiple sclerosis and in experimental demyelination.

14. The role of virus in the etiology of the encephalopathies and possible role in multiple sclerosis.

15. Study of cerebral blood flow in multiple sclerosis.

16. The possible importance of trace elements (mineral).

17. Studies in the role of the blood-brain barrier in multiple sclerosis.

18. The extension of studies of endocrine glands (particularly adreno-cortical), physiology in the multiple sclerosis process.

REFERENCE LIST

(1) Multiple Sclerosis - A Reappraisal by Douglas McAlpine, Charles E. Lumsden and E. D. Acheson; published in 1965 by The Williams and Wilkins Company, Baltimore, Maryland.

(2) Multiple Sclerosis by George A. Schumacher; published in the Journal of Chronic Diseases, October 1958, volume 8.

(3) Personal communications, Director of Medical Programs, National Multiple Sclerosis Society, 257 Park Avenue South, New York, New York 10010.

(4) Personal communications, Director, National Institute of Neurological Diseases and Blindness, Bethesda, Maryland 20014.

(5) Budget of the United States Government, 1966.

(6) From a survey compiled and published annually by "Drug Topics", Topics Publishing Company, New York, N. Y.

CREDITS

Cover Photograph: Courtesy National Multiple Sclerosis Society.

APPENDIX I

Medical Department Publications: For Physicians Only

- Course and Prognosis in Amyotrophic Lateral Sclerosis, by Roland P. Mackay, M.D.
- The Treatment of Multiple Sclerosis, by Henry Miller, M.D.
- Multiple Sclerosis, by George A. Schumacher, M.D.
- Multiple Sclerosis – Application of Rehabilitation Techniques by Edward E. Gordon, M.D.
- Multiple Sclerosis by Morton Marks, M.D.
- Multiple Sclerosis – Medico-Legal Aspects, by George A. Schumacher, M.D.
- Multiple Sclerosis – Management Aspects, by George A. Schumacher, M.D.
- Symposium on Disseminated (Multiple) Sclerosis & Allied Conditions Proceedings of the Royal Society of Medicine, vol. 54, No. 1, Jan. 1961
- Treatment of Multiple Sclerosis with Intrathecal Steroids, Charles Van Buskirk, M.D., et al.
- An Appraisal of Population Studies of Multiple Sclerosis, Leonard T. Kurland, M.D.
- Prognostic Criteria in Multiple Sclerosis, H. J. Bauer, et al
- Problems of Experimental Trials of Therapy in Multiple Sclerosis: Report by the Panel on The Evaluation of Experimental Trials of Therapy in Multiple Sclerosis, George A. Schumacher, M.D., (Chmn.), et al.

For Registered Nurses and Those Doing Home Nursing

- The RN and MS, by Frederick L. Stone, Ph.D.
- Multiple Sclerosis by Morton Marks, M.D.
- Nursing the MS Patient

For Patients (Only as prescribed by their physicians)

- A Home Program for Independently Ambulatory Patients
- A Home Program for Patients Ambulatory with Aids
- A Home Program for Wheel Chair Patients
- A Home Program for the Care of Bed Patients
- Mental Health and MS, by Molly Harrower, Ph.D. (sent without prescription)

For The Interested Public (Patients, Relatives, Friends, Etc.)

- Annual Report, 9th National Chapter Conference Medical Program
- Transcript of Proceedings
- Multiple Sclerosis by Russell DeJong, M.D.
- Multiple Sclerosis – Hope through Research — U.S. Dept. of Health, Education, and Welfare, Public Health Service, NINDB
- MS Search and Research, Prepared by the Medical & Research Dept., NMSS
- Clinic List – Clinics supported by local chapters of the N.M.S.S.
- MS KEYNOTES (A quarterly news bulletin which goes to all N.M.S.S. members; brings up-to-date facts and news about MS)

MS Research and Medical Report - A semi-annual newsletter of research and medical highlights. Pub. by National Multiple Sclerosis Society
MS Patient Service News - A semi-annual newsletter of patient care and management highlights. Pub. by National Multiple Sclerosis Society
Recent Efforts in MS Research - Richard L. Masland, M.D., Director. National Institute of Neurological Diseases & Blindness.

Among the groups supporting and cooperating in the effort of the National Multiple Sclerosis Society are the Panel of Corresponding Members of the International Panel of the National Multiple Sclerosis Society consisting of 89 neurologists and scientists from 31 countries, the Medical Sciences Information Exchange of the National Research Council, the National Institute of Neurological Diseases and Blindness, the National Medical Library, and national societies of other countries organized to conduct research and patient programs in multiple sclerosis.

The Medical Advisory Board of the Society, its Research Review Panel and Research Evaluation and Planning Committee are composed of leading neurologists and other scientists from the medical schools and other medical research institutions of the country. These serve on a voluntary basis.

The National Multiple Sclerosis Society sponsors a Central Multiple Sclerosis Pathological Registry at the Montefiore Hospital, New York City, under the direction of Dr. H. M. Zimmerman. This registry receives pathological material (brains and spinal cords removed at autopsy) from multiple sclerosis patients who have died. This material is available for research to qualified investigators.

WHAT ARE THE FACTS ABOUT

MUSCULAR DYSTROPHY?

MUSCULAR DYSTROPHY

WHAT ARE THE FACTS ABOUT MUSCULAR DYSTROPHY?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

I. WHAT IS MUSCULAR DYSTROPHY?

1. Muscular dystrophy is the name given to a group of chronic, non-contagious progressive diseases which are characterized by wasting and consequent weakness of the voluntary muscles. Though the rate of progression varies in the various types, most of the voluntary musculature finally becomes involved. As weakness increases, patients are confined to wheel chairs and, eventually, to bed. (1) (9)

II. WHAT IS THE CAUSE OF MUSCULAR DYSTROPHY?

1. Although the precise cause of muscular dystrophy has not yet been determined, it appears to be the result of an inborn error of metabolism, the lack of some specific enzyme or enzyme system essential for the conversion of foods into tissues and energy. (2)
2. A high percentage of patients come from families with a history of muscular dystrophy. The hereditary defect may be transmitted by either parent; in the most common (Duchenne) type of dystrophy, however, it is carried as a recessive trait by clinically unaffected females and transmitted almost exclusively to their male progeny. (9)
3. Muscular dystrophy may appear, without previous family history, as the result of a change, called a "mutation," in the genetic material. Once such a mutation occurs, it becomes hereditary. The mechanism of transmission, however, varies in the different types of the disease. (2)

4. Hereditary muscle disease, closely resembling human muscular dystrophy, has appeared in a number of animal species, notably mice and chickens. Both these species are under intensive investigation and, since they permit the kind of controlled experiments impossible to carry out with human beings, scientists have already derived from them a great deal of valuable information. (9)

5. Muscle lesions, similar to those found in muscular dystrophy, can also be induced in animals by maintaining them on a diet deficient in Vitamin E. Such lesions are reversible if sufficient quantities of the vitamin are restored to the diet, especially in combination with minute quantities of the trace element, selenium. (9)

   Vitamin E has not proved effective in the treatment of patients nor in animals suffering from hereditary muscle disease. It is therefore believed that the genetic defect results not from a deficiency of the vitamin but from an inability to metabolize it efficiently. (2)

III. HOW MANY PEOPLE ARE SUFFERING FROM MUSCULAR DYSTROPHY IN THE UNITED STATES?

1. At a conservative estimate, more than 200,000 men, women and children in the United States are suffering from muscular dystrophy. (3) The disease is not at present reportable and a nationwide census has never been attempted. In the State of Utah the prevalence has

been estimated at 1 to 500. (3)

2. Nearly two-thirds of the known muscular dystrophy victims in the United States are children between the ages of 3 and 13. Of these, almost all will die before adulthood. (3)

IV. DOES IT KILL ITS VICTIMS?

1. Muscular dystrophy in itself is usually not fatal although there are instances in which the involvement of the heart muscle precipitates death. As a rule, however, death is the result of intercurrent maladies, generally of a respiratory nature. The weakness and wasting of the chest muscles gradually lessen respiratory power; the most common cause of death is a direct interference with lung action.
2. To a muscular dystrophy patient a trifling cold may be a grave disease, as his wasted muscles make him unable to raise mucus, and there is a danger of suffocation. (1)

V. WHAT ARE THE SYMPTOMS OF MUSCULAR DYSTROPHY?

1. Symptoms in children are frequent falling, difficulty in ascending stairs, a peculiar side-to-side waddling gait, great difficulty in rising from a lying or sitting to a standing position, apparent increase in the size of the affected muscles, particularly in the calf, and con-

tractures (leading to distortions) of the affected muscles. While the contractures may cause suffering, pain is not a feature of the disease itself. (1)

2. In adult patients, the earliest muscles affected are those of the shoulders, upper arms, thighs and back, and, in certain forms of the disease, the face. In the case of the latter, the patient has a "transverse" smile and cannot whistle or drink through a straw. There is no pain. (1)
3. The facial symptoms may be noted in early childhood. Weakness in the shoulder girdle and upper arms is often noted during adolescence. The lower limbs are also ultimately affected.

VI. WHAT IS THE PRESENT STATUS OF THERAPY?

1. There is no effective treatment known. Isolated instances of beneficial effects have been reported with a wide variety of diets and substances. However, none has been shown to have any significant lasting effect on the course of the disease.
2. New substances and devices are reported at frequent intervals, but to date all have followed a similar pattern, - they consist of uncontrolled studies, using subjective criteria on a handful of patients. Commonly these reports are publicized in the popular press with only slight and insubstantial data offered in support of the claim.

   Whenever suggestive favorable evidence is available in support of any substance or procedure, clinics in various parts of the country co-operating with Muscular Dystrophy Associations of America, Inc., join in testing the therapeutic efficacy.

3. Physical therapy has proven of limited value in delaying contractures but does not otherwise affect the course of the dystrophic process. (5)

4. Antibiotics prolong the lives of many children who would otherwise succumb to respiratory infections, but have no curative effect on muscular dystrophy. (7)

VII. WHAT ARE THE MAIN TYPES OF MUSCULAR DYSTROPHY?

1. There are four main types of muscular dystrophy:

   a. Pseudohypertrophic type. This is by far the most prevalent form. It commences in childhood between the ages of three and ten, and its course is more rapid than any of the other types. Three times as many males are affected as females. It is hereditary in the majority of cases. (3)

   b. The juvenile form has its onset in childhood or adolescence, its progression is slower, and patients may reach middle age. This form is hereditary, and both sexes are equally affected. (3)

   c. The facio-scapulo-humeral form commences in early adulthood and affects the facial muscles, shoulders and upper arms. (3)

d. The mixed types are a group of conditions which have their onset between the ages of 30 and 50. Not inherited, they can strike anyone. The course of the disease is rapid, often causing death in from 5 to 10 years. (3)

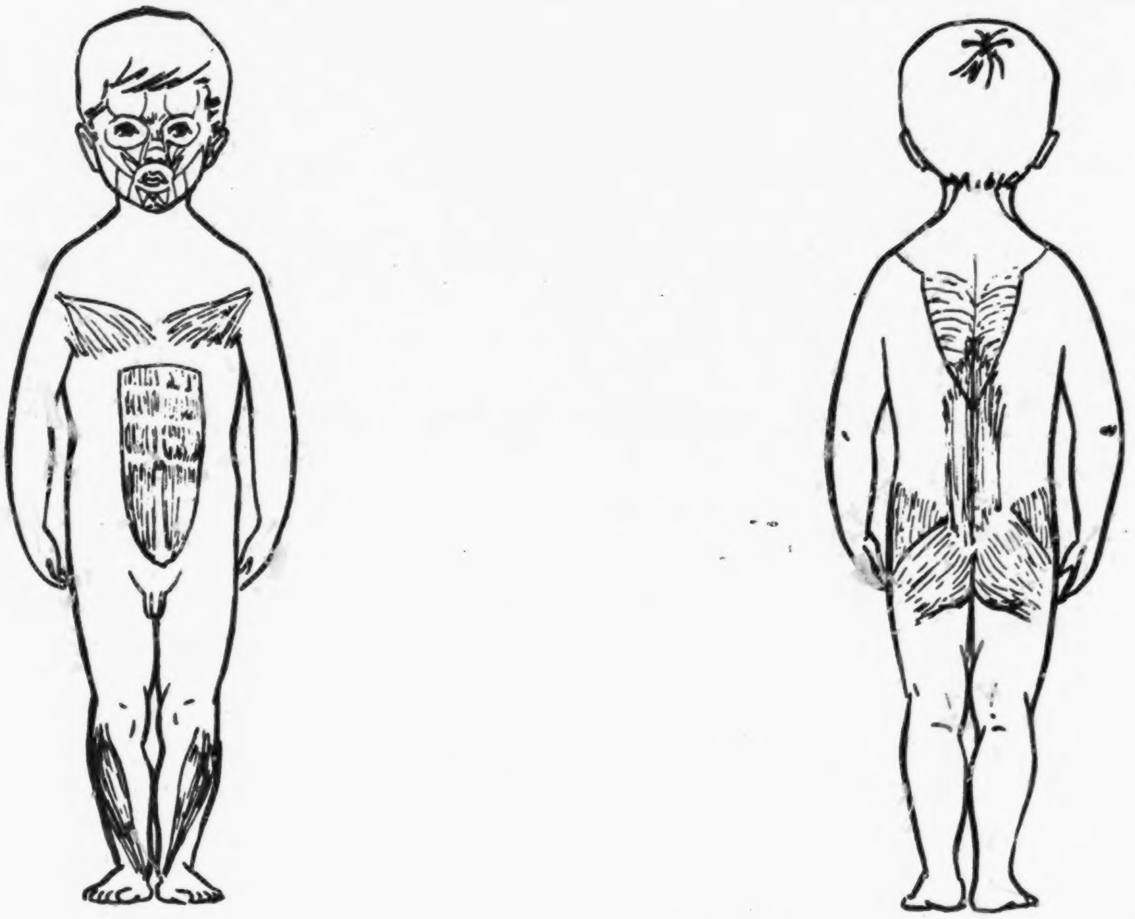
VIII. WHAT MEDICAL FACILITIES ARE AVAILABLE FOR THE MEDICAL CARE OF PATIENTS?

1. Medical understanding of muscular dystrophy has increased greatly in the past few years. It is now possible, through biochemical tests, to diagnose the disease long before the appearance of clinical symptoms. Such tests, and others -- notably, the analysis of biopsy samples -- are also useful in identifying female carriers of the most severe type of dystrophy. (9)
2. The average practitioner, however, is not too familiar with these new techniques. Nor are they generally taught in medical schools. For this reason, Muscular Dystrophy Association of America, Inc., has produced a film -- "Differential Diagnosis of Muscular Dystrophy and Related Conditions" -- specifically designed for training physicians and medical students to differentiate between dystrophy and the many disorders with which it is often confused. The production of the film was financed by a grant from the Neurological and Sensory Disease Service, an arm of the U.S. Public Health Service. (2)
3. Muscular Dystrophy Associations of America, Inc. was also respon-

sible for establishing a network of MD clinics in large metropolitan areas and other strategically located centers. The number of these clinics increases from year to year. In 1965, the Association was supporting 67 clinics throughout the nation. (6) These clinics provide the following services:

a. Diagnostic facilities to insure adequate differential diagnosis of patients referred to clinic.
b. Competent medical advice on special problems of the dystrophic patient.
c. Physical therapy treatments under medical supervision.
d. Medical social service assistance for personal and family problems.
e. Testing of newest drugs or therapeutic procedures on organized groups of patients under conditions of clinical control. At present, numerous research projects are in progress and as researchers continue to evolve new drugs and diagnostic techniques, these will be made available to all cooperating clinics.
f. Cooperation with the patient's personal physician.

4. In areas where local clinics have not been established, portions of this program are available through MDAA's affiliated chapters. The program covers not only muscular dystrophy patients but those suffering from the following related conditions: dystrophia myotonica, amyotonia congenita, amyotrophic lateral sclerosis, infantiale spinal atrophy and the various types of myositis. (3)



Diagrammatic representation of the initial muscle involvement and the general pattern of subsequent muscle involvement in the most common type of progressive muscular dystrophy in children.

IX. IS ANY DIRECT ASSISTANCE GIVEN TO PATIENTS?

1. Muscular Dystrophy Associations of America, Inc., through local chapters assists in the purchase and repair of wheel chairs, hospital beds, braces, lifts and other appliances.
2. In many areas chapters conduct education and recreation programs and provide transportation for patients.

X. WHAT MATERIAL IS AVAILABLE FOR PROFESSIONAL AND PUBLIC EDUCATION ON VARIOUS PHASES OF DYSTROPHY?

1. Of primary professional interest are the medical conferences which are sponsored by Muscular Dystrophy Association of America. Frequent medical conferences are called by the Association, and between these full scale conferences, symposiums are held as convenient. (6)
2. The Association has catalogued its library of information. Two bibliographies of this material are available: Professional Publications and Publications of General Interest. The Association also finances the compilation of medical abstracts and distributes these on request at no charge. (6)
3. Literature of general interest is also available from local chapters.

XI. HOW EXTENSIVE ARE THE RESEARCH PROGRAMS IN MUSCULAR DYSTROPHY?

Approximately $5,451,260 is being spent annually for research in muscular dystrophy, as follows:

1. For the year ended March 31, 1965, Muscular Dystrophy Associations of America expended $1,573,824 for research in the general field of muscular dystrophy. Grants-in-aid to universities and medical centers in this country and abroad accounted for $953,179 of this sum. The remainder, $620,645, was allocated, as an institutional grant, to the MDAA-built and sponsored Institute for Muscle

Disease in New York City.

a. Since its formation in 1950, the Association has expended a total of $11,262,446 for grants-in-aid to individual projects.

b. In addition, the Association spent $5,166,257 to build and equip the Institute for Muscle Disease which began operations in the summer of 1959.

c. To date, the Association has expended a total of $5,236,671 in institutional grants to the Institute.

2. The National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service will spend an estimated $3,877,436 on muscular and neuromuscular disorders in fiscal 1965. (7)

A strain of fowl which suffer from heriditary myopathy very similar to human muscular dystrophy. Increasingly used in research studies

a. Of this sum, $2,977,460 supported research in muscular dystrophy and neuro-muscular disorders at various institutions throughout the country, and $900,000 was spent by the Institute for the study of these disorders at its own laboratories in Bethesda, Maryland. (7)

3. In contrast to what is currently being spent for research in muscular dystrophy, Americans spent in 1964:

   $50,150,000 for pressed cake face powder; (8)

   $33,420,000 for suntan lotions and oils; (8)

   $20,930,000 for powder puffs. (8)

XII. WHAT ARE THE NEEDS IN THE FIGHT AGAINST MUSCULAR DYSTROPHY?

1. Funds for Research

More funds for research into the cause and treatment of muscular dystrophy, to prevent the deaths of the many children now afflicted, are needed by the National Institute of Neurological Diseases and Blindness, Muscular Dystrophy Associations of America, and the National Foundation for Neuromuscular Diseases, Inc.

2. Education

Research leads to greater understanding of the needs of the muscular dystrophy patient, both child and adult, his psychology and his ability, within limitations, to play a useful part in the community. Our new understanding, obtained through scientists, needs to become widespread among physicians, nurses and all people associated with muscular dystrophy cases, so that the "hopeless" prognosis will not lead to a patient's unhappiness and despair. (5)

3. Funds for Patient Care

More funds are needed to help the estimated 200,000 people in the United States afflicted with muscular dystrophy to obtain educational and recreational opportunities, orthopedic applicances, physical therapy, social services, or psychiatric assistance in adjusting to their progressive condition.

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(3) "Muscular Dystrophy - The Facts", publication of Muscular Dystrophy Associations of America, Inc., 1790 Broadway, New York.

(4) "Therapy in Muscular Dystrophy" - A. T. Milhorat, M.D. - Medical Annals of the District of Columbia, Vol. 23, p. 15, June 1954.

(5) "An Approach to the Rehabilitation of Children with Muscular Dystrophy" - Arthur S. Abramson, M.D. 17 pp., 1953. Published by Muscular Dystrophy Associations of America, Inc.

(6) Annual Report, Muscular Dystrophy Associations of America, Inc., 1790 Broadway, New York.

(7) National Institute of Neurological Diseases and Blindness, National Institutes of Health, Bethesda, Maryland, 20014. A pamphlet for the public, "Muscular Dystrophy, Hope Through Research" - is available from the Institute. Also available in Spanish.

(8) From a survey compiled and published annually by "Drug Topics", Topics Publishing Co., Inc.

(9) "Muscular Dystrophy - Review and Recent Observations" - Carl M. Pearson, M.D. -- The American Journal of Medicine, Vol. 35, No. 5, pp. 632-645.

CREDITS

Cover photograph and illustrations courtesy Muscular Dystrophy Associations of America, Inc.

WHAT ARE THE FACTS ABOUT

PARKINSONISM?

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the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N.Y. 10017

1966

WHAT ARE THE FACTS ABOUT PARKINSONISM?

I. WHAT IS PARKINSONISM?

The term Parkinsonism is applied to a group of progressive, disabling symptoms of the nervous system which include muscular rigidity, tremors and loss of automatic, associated movements. The typical Parkinson patient shows a stooped posture, loss of equilibrium while walking, a low-amplitude, monotonous speech, and in rare cases, some deterioration of mental faculties.

Strictly speaking, Parkinsonism is not a disease, but rather a combination of the above symptoms which result from a variety of processes capable of producing dysfunction in the basal ganglia, as well as its connections. At post mortem examination, changes are consistently found in the substantia nigra, globus pallidus, locus caeruleus, as well as in several of the motor nerve centers in the medulla.

II. WHAT ARE THE CHIEF TYPES OF PARKINSONISM?

1. Parkinson's Disease (Paralysis Agitans or Idiopathic Parkinsonism): A slowly progressive disease usually beginning in the 50's or 60's with tremor first appearing in one limb and usually spreading to other parts of the body within a few years. Loss of facial expression, a poverty and general slowness of movement gradually make their appearance and with further progression, disturbance of gait and posture develop which may ultimately confine the patient to bed or a

wheelchair existence. This type accounts for the majority of cases of Parkinsonism.

2. Post-encephalitis Parkinsonism typically presents some of the symptoms of Parkinson's Disease plus additional symptoms including oculogyric (causing movements of the eye) crises, weakness of the muscles of controlling swallowing and various ocular palsies.
3. Symptomatic Parkinsonism: A host of conditions, including brain tumors, head injuries, malaria, syphilis, and certain chemicals may, on rare occasions, so damage the basal ganglia and brain stem as to produce a Parkinson-like state. A number of rare disorders of the nervous system may present some resemblances to Parkinson's disease in addition to other symptoms.
4. Pseudo-Parkinsonism may be induced by many of the tranquilizing drugs employed in modern psychiatric treatment. The condition disappears when the offending drug is discontinued.

III. WHAT IS THE CAUSE OF PARKINSONISM?

1. The cause of Parkinson's Disease is not known; a chemical disturbance of nerve cells seems probable. The role of heredity has not yet been fully established.
   a. At a recent symposium on Parkinson's Disease at Columbia University in New York, sponsored by the National Institute of Neurological Diseases and Blindness, studies of the biochemistry and

pharmacology of the basal ganglia were reported and discussed by 600 scientists from many countries. The role of the neurohormone, dopamine, was a topic of special interest, and grantees from the University of Goteborg, Sweden, reported that an artificially induced depletion of the substance in the basal ganglia can produce Parkinson-like symptoms.

Their studies also indicate that below normal levels of dopamine are found in the cerebrospinal fluid of Parkinson's patients. Striking dopamine deficiencies were also reported from the University of Vienna in an autopsy study of the brains of 40 Parkinson's patients.

2. Post-encephalitic Parkinsonism in nearly all cases represents a sequel of a particular type of encephalitis, "encephalitis lethargica", which occurred chiefly in the 1920's. Although the cause was not found, encephalitis lethargica very probably was due to a virus. Parkinsonism only rarely follows other types of encephalitis.
3. Arteriosclerosis may be associated with and perhaps may aggravate Parkinsonism but is not a direct cause of Parkinsonism.

IV. WHAT IS THE PREVALENCE OF PARKINSONISM?

1. The best available estimate indicates that there are about 500,000 persons with Parkinsonism living in the United States today, and that about 40,000 new cases are now being added each year.
2. Nearly all cases are fifty years or older; from 1 to 2% of persons

over 60 have Parkinsonism.

3. Males and females are approximately equally affected.

V. WHAT IS THE MORTALITY OF PARKINSONISM?

1. 2,929 deaths were listed as due to Parkinson's Disease in 1964, but the number of persons with Parkinsonism dying each year is believed to be about five times greater than this figure. Strictly speaking, Parkinsonism is not in itself a direct cause of death, but it may predispose the individual to other diseases, notably pulmonary conditions, and thereby shorten life expectancy. Mean survival from onset to death is approximately twenty years.

VI. IS THERE ANY CURE OR TREAMENT FOR PARKINSONISM?

1. No cure or means of reducing the progress of the disease is known today.
2. A large number of closely related drugs are available which can partially alleviate the symptoms of Parkinsonism. They are helpful in mild and moderately severe cases but provide little benefit to far advanced cases.
3. A variety of brain operations have been tried over the past thirty years with the aim of destroying nerve centers necessary for the maintenance of tremor and rigidity without producing paralysis or other undesirable side effects. Many different parts of the brain

have been attacked, several of which yield similar results. The most favorable target to date seems to be a particular area of the thalamus. The operations performed today are relatively safe and have effectively suppressed tremor and rigidity in the majority of cases selected for surgery. However, other disabling symptoms are not relieved and the course of the disease does not appear to be altered.

VII. WHAT ARE SOME OTHER PROBLEMS IN THE CARE OF PARKINSONISM?

1. Because Parkinsonism is a chronic, incurable, progressive disorder, therapeutic goals in rehabilitation are necessarily limited. Physical therapy provides only limited and temporary benefit and, consequently, must be given frequently and indefinitely. However, patients with mild, slowly progressive cases can be helped to maintain productivity or at least their independence for many years.
2. No special clinical facilities are available for the treatment and care of advanced cases of Parkinsonism.
3. More physicians are needed to treat Parkinson patients. There are only about 350 qualified neurologists actively engaged in practice in the United States who are specially prepared to advise as to the special needs of the Parkinson patient. Most cases of Parkinsonism are under the care of general practitioners and internists, few of whom have a special experience or interest in this disease.

VIII. WHAT ARE SOME OF THE PROBLEMS FOR THE PARKINSONISM PATIENT?

1. Where the Parkinson patient requires full-time care, the costs are often prohibitive, ranging from $200 a month to $100 a week or more.
2. Economic resources of the individual patient are strained if he is unable to work or if he requires frequent physical therapy. On the basis of the experience of physicians with large practices in this field, it was estimated that about 40% of private office patients and 67% of clinic patients found it impossible to be gainfully employed.
3. The psychological problems, normally found in the chronic patient who is dependent on outside economic aid and who is dependent on others for personal hygiene, are aggravated by the knowledge that causes and cure are yet undiscovered and progression of the disease certain.

IX. WHAT IS BEING SPENT FOR RESEARCH IN PARKINSONISM?

1. The National Institute of Neurological Diseases and Blindness of the U.S. Public Health Service spent $2,233,867 on Parkinson's Disease research and related chronic neurological disorders of aging in fiscal 1965.
2. The Parkinson's Disease Foundation at the New York Neurological Institute, 710 West 168th Street, New York City, is a voluntary health agency specifically interested in this disease. Since the Foundation was established in 1947 through 1964, it has dispensed approximately

$700,000 to support a broad range of basic research.

X. WHAT IS NEEDED IN THE FIGHT AGAINST PARKINSONISM?

1. Additional research funds must be made available to the National Institute of Neurological Diseases and Blindness and to the voluntary agencies willing to undertake research in this field.
2. Further development of specialists in this field is needed and further training of the general practitioner.
3. Convalescent hospitals should be constructed in key points throughout the country. These would serve not only to care for completely incapacitated Parkinson patients, but would also act as research-demonstration centers, where clinical testing of old and new agents may be made, and where proper treatment could be demonstrated to physicians, especially those from rural areas.

Information concerning current research obtained through the National Institute of Neurological Diseases and Blindness. The Institute has published a pamphlet, "Parkinson's Disease - Hope Through Research" for laymen which can be obtained by writing to the Institute at Bethesda, Maryland, 20014.

Grateful acknowledgement is made to the National Institute of Neurological Diseases and Blindness, and to the Parkinson's Disease Foundation, New York, for their help in compiling this fact sheet.

CREDITS

Cover photograph courtesy of Merck Sharp & Dohme

WHAT ARE THE FACTS ABOUT

ALLERGIES AND INFECTIOUS DISEASES?

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This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N. Y. 10017

1966

I. WHAT ARE INFECTIOUS DISEASES?

1. Infectious diseases occur whenever pathogenic microbes invade the body and disrupt or destroy any or all of the vital biologic processes. Infectious diseases, therefore, are always linked with microbes. The classic way of showing that a disease is infectious is to demonstrate its transmission from human to human or from animal to human.

II. WHAT ARE THE DIFFERENT TYPES OF INFECTIOUS DISEASES?

1. Infectious diseases are usually defined in terms of the different kinds of disease-causing microbes. These microbes may be classified under the following headings:
   a. Bacteria are one-celled plants. Many of the more serious diseases -- pneumonia, meningitis, scarlet fever, tuberculosis -- are caused by bacteria.
   b. Parasites are one-celled or multiple-celled animals. One of the more significant parasitic diseases is malaria, the most common infectious disease of man. Others are schistosomiasis and filariasis, which are serious medical and socioeconomic problems in many of the emerging nations.
   c. Rickettsiae are microbes that flourish only within cells of the host. Typhus fever, a notorious affliction of mankind for more

than 4 centuries, is caused by a rickettsial agent. So is Rocky Mountain spotted fever.

d. Viruses, the smallest and simplest of infectious disease microbes, are cellular parasites like the rickettsiae. Scientists have identified about 300 viruses; 150 cause respiratory tract infections alone. Viral diseases include smallpox, measles, polio, rabies, rubella (German measles), influenza and the common cold.

e. Fungi are plant-like organisms that live in soil, rotting vegetation, and bird excreta. The systemic fungal diseases are not contagious from man to man or from animal to man but are caught by inhaling contaminated material. In histoplasmosis, for example, the fungus attacks the lungs first and may later infiltrate other organs of the body.

2. Many medical authorities suspect that repeated acute respiratory infections are an underlying cause of emphysema and other crippling chronic lung disorders. In addition, there is growing evidence from comparative animal studies that slow-acting viruses or other microbes may cause such chronic disorders as rheumatoid arthritis and degenerative diseases of the nervous and respiratory systems.

III. WHAT IS THE INCIDENCE OF INFECTIOUS DISEASES IN THE UNITED STATES?

1. There were 259,584,000 episodes of infectious disease in 1963--56%

(144,541,000) required medical attention. (1)

Infective & parasitic diseases	
Common childhood diseases	24,666,000
The virus, not otherise specified	24,105,000
Other infective and parasitic	6,511,000
	55,283,000
Respiratory conditions	
Upper respiratory conditions (cold, etc.)	133,797,000
Influenza	61,980,000
Other respiratory (including pneumonia, bronchitis)	8,524,000
	204,301,000
	259,584,000

a. Thus, on an average, each American suffered one or two such illnesses in that year. (2)

b. Each illness usually resulted in about 2 days of confinement, and curtailed the patient's normal activities for another 2 or 3 days, for a total of 850,000,000 days of restricted activity. (1)

2. Acute respiratory illnesses alone account for about half of all recorded sickness. (1) In children, the proportion is higher. (1) Viruses are the infectious agents that cause most acute respiratory illness. (3)

3. But the total incidence of acute respiratory illness is estimated to be much higher--the typical American has four, his child six, nose, throat, and lung infections each year--because so much of acute respiratory illness is unrecorded. (4)

IV. HOW MANY DAYS DO AMERICANS LOSE FROM WORK AND FROM SCHOOL DUE TO INFECTIOUS DISEASES?

1. 108,087,000 days were lost from work due to infectious diseases in 1963. Infectious diseases caused about 50% of all days lost from work due to acute illness. (1)

Infective and pararitic diseases (common childhood diseases, virus not otherwise specified)	20,735,000
Respiratory conditions	
Upper respiratory conditions (common cold)	39,958,000
Influenza	37,948,000
Other respiratory conditions (bronchitis, etc.)	9,446,000
	87,352,000
	108,087,000

a. Even at the minimum wage of $10 a day, this represents a yearly loss in income of almost $1.1 billion.

b. But the average hourly wage in 1963 was $2.46 for an 8-hour day, so that the loss in income is closer to $20 a day, or a total of about $2.2 billion for infectious diseases in 1963.

2. 153,230,000 days were lost from school due to infectious diseases in 1963. An infectious disease accounted for 8 out of every 10 days lost from school due to an acute illness. (1)

3. More than 87,000,000 days were lost from work and another 87,000,000 days were lost from school in 1963 due to acute respiratory illnesses alone. (1)

V. HOW MANY PEOPLE DIE OF INFECTIOUS DISEASES IN THE UNITED STATES?

1. 108,795 Americans died of infectious diseases in 1963. (5)

   a. The leading causes of death among infectious diseases are:

Influenza and pneumonia	70,761
Tuberculosis	9,311
Kidney infections	8,952
Bronchitis	5,462
Syphilis & sequelae	2,666
	97,152

2. Thus, infectious dieseases as a group ranked as the Number 3 killer after heart disease,stroke and cancer.

3. Infectious respiratory diseases alone (pneumonia and influenza) accounted for 70% of all infectious disease deaths in 1963. (5)

   a. 1962 and 1963 were influenza epidemic years. High mortality from influenza early in 1963 pushed the total death rate up to 962 per 100,000 population--a rate higher than for any year since 1951, when it reached 967. The 1964 death rate is estimated at 941.3. (5)

   b. The influenza and pneumonia death rate in 1963 increased 16% over 1962. However, the death rate in 1964 is 17% lower than in 1963.

4. Death rates from kidney infections have also increased in the face of a levelling off of the general death rate. (5)

   a. The death rate for kidney infections in 1964 was about 11% higher than in 1963.

   b. This is a continuation of a slow but fairly constant increase of 96% from 1954 to 1964.

The death rate from kidney infections has increased from 2.7 (per 100,000 population) in 1954 to 5.3 in 1964.

VI. WHAT AGE GROUPS ARE THE PRINCIPAL VICTIMS OF INFECTIOUS DISEASES:

1. Infectious diseases kill chiefly the very young and very old, but they also take a great toll among people of working age. (5) Of the 108,795 Americans who died of an infectious disease in 1963 -
    a. 54.4% were over 65 years of age.
    b. 17.7% were children under 5 years of age.
    c. 25.4% were working adults 20 to 64 years of age.
    d. 2.5% were youngsters 5 to 19 years of age.
2. More Americans (66,859)--or 6 out of every 10 who died of an infectious disease--died of pneumonia than of any other infectious disease. (5)
    a. 58.5% of the pneumonia victims were over 65 years of age.
    b. 20.9% were children less than 5 years of age.
3. Influenza killed 7,083 Americans during the 1963 epidemic; 4,987 (70.4%) were over 65 years of age. (5)

VII. WHAT DO THESE DEATHS MEAN IN ECONOMIC TERMS?

1. If the 27,596 persons of working age who died of infectious diseases in 1963 had lived just one extra, healthy year, they could have

earned $172,447,000 in that one year alone. (6)

2. The Federal Government could have gained $24,312,000 in income tax revenue on those earnings in 1963. (6)

VIII. HOW MUCH DO PEOPLE SPEND ON MEDICAL TREATMENT FOR INFECTIOUS DISEASES IN THE UNITED STATES?

About $2.4 billion annually: In 1963, Americans spent:-

More than $1 billion for medical treatment of infectious diseases. (8)

$290 million	for preventive immunization. (8)
$753 million	for anti-infective drugs. (9)
$400 million	for respiratory pharmaceuticals. (9)

Research with dangerous viruses has to be carried out in special isolation rooms

IX. WHAT WAS THE MILITARY MANPOWER LOSS DUE TO INFECTIOUS DISEASES DURING THE KOREAN WAR?

1. During the Korean War (July 1950-July 1953), about 11,000 young men--almost the equivalent of an Army division--failed the pre-induction medical examination because of an infectious disease. Infectious diseases ranked 8th among 19 medical reasons for draft rejection. (10)
2. During the Korean War period, moreover, infectious diseases put many troops out of action.
   a. 10,192,000 man-days were lost from active duty due to an infectious disease. About 1 out of every 4 days lost due to noncombat causes was lost by a soldier who had an infectious disease. (10)
   b. In addition, close to 5,000 soldiers died or were discharged because of an infectious disease. (10)

X. WHAT ARE ALLERGIC DISORDERS?

1. Allergic disorders result from abnormal reactions of certain sensitive people to substances which are harmless to nonsensitive people. The tendency to hypersensitivity seems to be inherited: Allergic parents often have allergic children.

   A person may be sensitive to one or to many things.

   To develop an allergy, he must first be exposed to the specific thing to which he is sensitive. His body then produces protective substances, called antibodies, to "fight off" the ordinarily harmless material, very much as normal people produce antibodies to resist infectious diseases. This "resistance" by the sensitive individual brings about allergic symptoms. Why one person is sensitive and another is not is as yet unknown.

2. Almost anything can cause an allergy in the susceptible person. Substances he breathes in, such as pollens or molds, can cause hay fever or asthma.

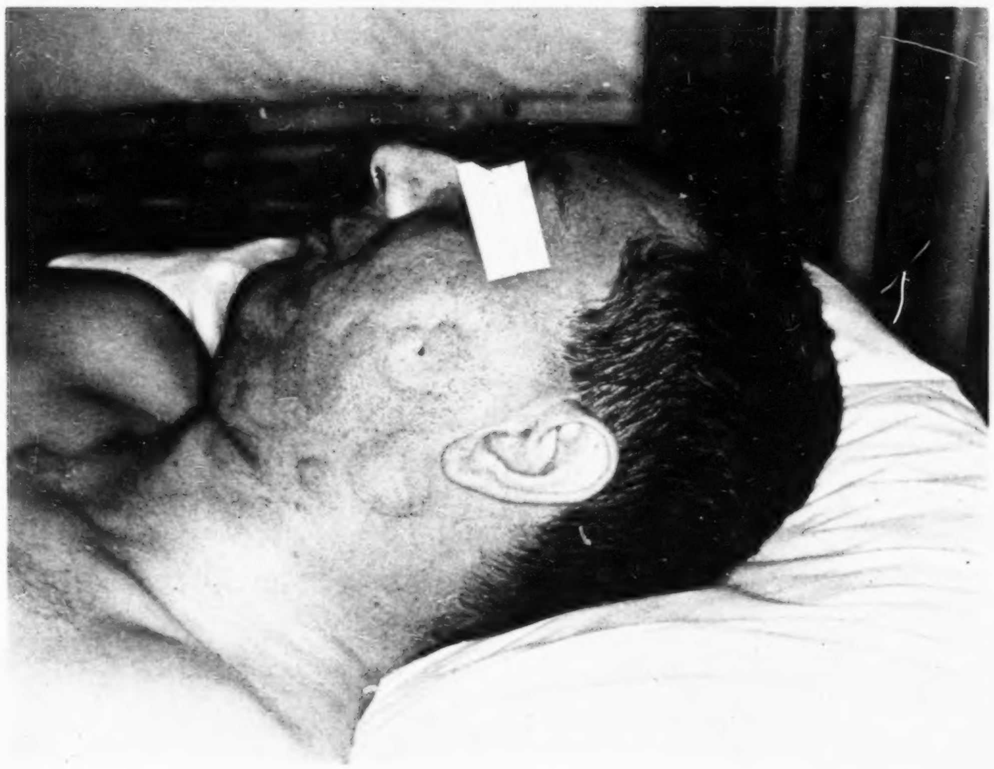
   The things he eats, including ordinary foods and drugs, can cause rashes or intestinal upsets. Some of the most violent reactions result from injected materials. Tetanus antitoxin (or other preparations containing horse serum), or penicillin, or bee stings, can cause shock and sudden death.

   Contact dermatitis is the usual reaction if the sensitive person touches the, for him, wrong thing. Cold, heat, and light can cause skin eruptions or even shock.

Infectious organisms can cause several kinds of allergic reactions.

In some instances, the person's own tissues may stimulate the production of antibodies which attack that tissue. This reaction results in an "autoimmune" condition, such as Hashimoto's disease or lupus erythematosus.

3. The causes of many serious diseases--such as polyarteritis nodosa, dermatomyositis, some kidney diseases, and rheumatoid arthritis are still unclear, but it is believed that allergic reactions may play a part in their development.



A severe allergic reaction to penicillin. Many new drugs and even such old ones as aspirin cause allergic reactions. (Photo courtesy of Armed Forces Inst. of Pathology, Neg. #58 11665)

4. Allergies can affect any part of the body. They may be extremely mild or they may cause sudden death or lifelong disability. All allergies are chronic.

XI. HOW MANY PEOPLE ARE SUFFERING FROM ALLERGIC DISORDERS IN THE UNITED STATES?

1. About 20 million Americans - or about 1 in 10 - suffer from an allergy at any given time, according to the Allergy Foundation. (11)
2. The total figure for average prevalence of allergic conditions recorded by the National Center for Health Statistics of the U. S. Public Health Service is 16,790,000. (13) This is equal to the entire population of New York State, including New York City. (14)
   a. Of this total, 12.6 million persons suffer from asthma and/or hay fever.
3. 600,000 workers in the United States are victims of occupational dermatitis. (15)
4. Surveys among school children have shown prevalence rates of physician-verified allergy ranging from 23.7% to 28.5%. (12)
5. Accurate figures on allergic conditions are hard to collect. This difficulty is complicated by the fact that many people suffer from more than one allergic condition. New disorders are being recognized and identified as allergic. Technology continually brings out new materials to which people become allergic. Notable among

these are detergents, cosmetics, plastics, and drugs. Five percent of the population of the United States is said to be allergic to penicillin alone. (16)

XII. WHAT AGE GROUPS ARE THE PRINCIPAL SUFFERERS OF ALLERGIC DISORDERS?

1. Allergies usually start early in childhood and frequently last a lifetime. But unlike other chronic disorders, their relative importance decreases with age. Of the 1,118,000 persons listed as limited in activity by asthma and hay fever, only 254,000 were over 65. (13)
2. About half of the more than 5,000 people who die from asthma each year are in the working age groups. (5)
3. Allergies are the leading chronic disease of children, accounting for one-third of all chronic conditions in children under 17. At any given time from July 1961 to June 1963, about 4,500,000 children under 17 were suffering from allergic disorders. Of the 12,646,000 Americans suffering from asthma-hay fever, 3,590,000 were under 17. (17)

XIII. HOW MANY DAYS DO ALLERGY SUFFERERS LOSE FROM WORK AND FROM SCHOOL?

1. 10,433,000 days are lost from work a year because of allergic disorders. (13)
2. The Allergy Foundation of America estimates this time lost from

work because of allergic disorders costs industry $200 million a year, discounting the cost to the wage earner. However, the Foundation says that this figure includes only direct time lost and is composed basically of time lost due to asthma and hay fever. They believe that if time lost due to all allergies and losses due to subnormal output on "off days" were included, a more realistic estimate of the annual loss to industry would be more than $400 million. (11)

3. Children under 17 years of age lose over 9 million days from school and spend about 13 million days in bed a year due to allergic disorders. (13)

XIV. HOW MUCH DO PEOPLE SPEND ON MEDICAL TREATMENT FOR ALLERGIES IN THE UNITED STATES?

1. Expenses for medical treatment for allergic conditions can only be guessed at. It should be kept in mind that allergies are chronic and persist over long periods of time. Treatment consists of skin tests for diagnosis, desensitization injections, steroid therapy, and the use of antihistiminics, bronchodilators, sedatives, tranquilizers, and topical preparations. Secondary infections, particularly in patients with respiratory allergies, must be kept under control. Ideally, the allergic patients is continually in touch with his physician, since his treatment must constantly be reevaluated as new drugs

appear or the character of his allergy changes. Much of the treatment of the allergic patient consists in avoiding the substance to which he is allergic, and he must be guided in this by his physician.

2. There are two figures which give some idea of the annual cost of medical treatment for allergic disorders.
   a. Dr. Frances C. Lowell of the Harvard Medical School estimates that the number of patients in this country who are receiving injection therapy to relieve ragweed pollen hay fever is "probably of the order of 1,000,000." (18) Assuming that this therapy costs each patient about $100 a year, the total annual cost would come to $100,000,000.
   b. The Department of Commerce figure for 1964 domestic shipments of antihistamines by pharmaceutical firms is $30,062,000. The retail value of these shipments is estimated to be about $49,602,300. (9) Separate figures for shipments of other products used in the treatment of allergies are not given. If these figures were available they would probably be enormous, since the 1965 Physicians Desk Reference lists pages of ethical drugs under the section on allergies. Some of the types of products in use are sun protectants, special food products, ear drops, eye drops and ointments, nasal sprays, hypo-allergic hair spray, cosmetics, and soaps; also pollen extracts, antihistamines, antipruritics, antitussives and expectorants, local and systemic steroids, bioflavonoids and other antihemorrhagic products; and broncho-

dilators, topical creams and ointments, as well as narcotics, tranquilizers, and vitamins. (19)

Asthma-hay fever affects 3,590,000 children in the United States. A severe attack of asthma often requires emergency treatment.

XV. HOW MANY MEN WERE UNFIT FOR MILITARY DUTY DURING THE KOREAN WAR DUE TO AN ALLERGIC DISORDER?

1. During the Korean War (July 1950-July 1953), about 12,000 young men--enough to staff an Army division--failed the pre-induction medical examination because of an allergic disorder. Allergies ranked 7th among 19 medical reasons for draft rejection. The rejection rate for allergic disorders was 74 out of every 10,000 men examined. (10)
2. During the Korean War period, moreover, allergic conditions caused a fairly large amount of noneffectiveness among troops. (10)
    a. 613,000 man-days were lost from active duty due to an allergic disorder. (10)
    b. In addition, almost 3,000 soldiers were discharged because of an allergic disorder. (10)

XVI. HOW MUCH IS BEING SPENT FOR RESEARCH IN INFECTIOUS AND ALLERGIC DISEASES?

Approximately $75 million:

1. Out of a total appropriation of $77,986,000, the National Institute of Allergy & Infectious Diseases is currently (fiscal 1966) spending for research in this area about	$67,448,000.
2. Other institutes of the National Institutes of Health are supporting allergy and immunology research and separate research on asthma with an additional	7,474,681.
	$74,922,681.

3. Out of its research budget, the Nat'l Institute of Allergy and Infectious Diseases is spending $1 million for research on the role of acute respiratory infection as a cause of emphysema, and $1 million to develop and test a vaccine against rubella (German measles). (20)

4. Other expenditures of the National Institute of Allergy & Infectious Diseases fiscal 1966 budget include:

Training grants	$ 9,059,000.
Review & approval of grants	1,121,000.
Program direction	358,000.
	$10,538,000.
Plus research programs:	
Research grants	$43,466,000.
Research fellowships	3,537,000.
Intramural research	12,620,000.
Collaborative research	7,825,000.
	$67,448,000.
Total fiscal 1966 appropriation	$77,986,000.

5. In contrast to the $75 million spent by the National Institutes of

Health for research on infectious diseases and allergies:

a. Americans spend annually well over $2.5 billion on medical treatment for these conditions.

b. Americans spent $358.8 million for chewing gum alone in 1964. (21)

XVII. WHAT HAVE BEEN THE MAJOR PAYOFFS OF RESEARCH IN INFECTIOUS DISEASES?

1. The two really big research payoffs in infectious diseases have been the development of numerous vaccines and of the antibiotics and sulfa drugs. Many major infectious diseases have been brought under complete control in the United States through the use of these products, although the diseases are still rampant in other parts of the world.

   a. Poliomyelitis, which until a few years ago killed and crippled thousands of young people every year, has been eliminated as a public health problem in this country by the Salk and Sabin vaccines.

   b. Measles vaccine has cut the toll of this dangerous disease of childhood.

   c. Smallpox, diphtheria, whooping cough, and tetanus vaccines have been so effective that Americans now take freedom from these diseases for granted.

   d. New vaccines against severe respiratory infections have been developed and are being field tested in humans, and an improved, experimental killed vaccine against tuberculosis is being tested in animals. (22)

2. Advances have been made in the treatment of some lesser-known diseases:
   - a. New viruses, especially those that cause respiratory infections, are being identified at a rapid rate.
   - b. There is growing evidence that such heretofore puzzling diseases as muscular dystrophy may be caused by infectious agents.
   - c. Some experimental drugs, such as hamycin, have been found to be effective for the treatment of deep fungal infections, such as histoplasmosis, blastomycosis, cryptococcosis, and candidiasis. (22)

XVIII. WHAT ARE THE RECENT RESEARCH PAYOFFS AGAINST TROPICAL DISEASES?

1. We are gradually learning more about tropical diseases, a threat to Americans traveling or stationed overseas.
   - a. The drug Ambilhar has been found to be effective in the treatment of schistosomiasis. (23)
   - b. Studies with antiviral substances--thiosemicarbazone for the prevention or amelioration of smallpox and di-iodouridine (IUDR) for the treatment of herpetic keratitis (a serious eye disease)--are meeting with some success. (22)

XIX. WHAT ARE THE RECENT RESEARCH PAYOFFS AGAINST ALLERGIES?

1. In the area of allergy, there have been some successes with the cortisone products but much remains to be done.
   a. Better diagnostic measures are being developed.
   b. Allergens for desensitization or injection therapy are being standardized, so that results of this method of treatment can be better evaluated. (22)

XX. WHAT ARE THE RECENT RESEARCH PAYOFFS IN IMMUNOLOGY?

1. Studies in immunology are essential to progress in the areas of both the allergic and the infectious diseases, and much is being accomplished.
   a. The key to the problem of graft rejection in organ transplantation lies in understanding the immune system and learning how to control its undesirable effects. Drugs are available, which, by modifying the immune response, create tolerance to grafted organs. These drugs have also been found useful in the treatment of auto immune disorders. (22)

XXI. WHAT ARE THE PRINCIPAL NEEDS IN THE FIGHT AGAINST ALLERGY AND INFECTIOUS DISEASES?

1. More research workers need to be trained. New knowledge and new

methods create a need for trained people capable of developing and enlarging this knowledge. The need is particularly acute in the field of allergy. (24)

2. Facilities for study need to be expanded. Here, the most acute need is for facilities for viral research. A whole new frontier has been opened in the last decade, rapid progress is being made, and each step forward brings new problems to be investigated. (24)

3. New vaccines are needed. There is a need for a vaccine against hepatitis.

   Promising vaccines have been developed against some of the microbes that cause severe acute respiratory infections, namely adenovirus type 4, Mycoplasma pneumoniae, and parainfluenza virus types 1, 2, and 3. But vaccines are still needed against the respiratory syncytial virus, which kills about 5,000 children a year, and against the many rhinoviruses that cause the common cold. (24)

4. Research on drug resistance is sorely needed. Studies on the physiology, biochemistry, and genetics of bacteria need to be stepped up. New drugs are needed to take the place of those to which resistance is growing, and for use in conditions for which there is no effective drug at present. While the main problem in drug resistance has been bacterial resistance to the antibiotics, resistance of malaria parasites to commonly used antimalarial drugs has become a problem among our troops in Southeast Asia. (24)

5. There are few effective drugs or methods of treatment for many of the parasitic and systemic fungal infections, and too little known about many of these diseases.

   Some of them occur in the United States; others are a threat to U.S. military and civilian personnel serving overseas. (24)

6. Basic research in virology is opening up completely new areas of knowledge and has the potential for answering many unanswered questions in medicine and in biology itself. Antiviral substances are needed and progress is being made. But much remains to be done. The causative agent of infectious hepatitis needs to be identified. (24)

7. Basic research for a better understanding of the immune response and its role in allergic disorders and organ transplantation is of the first importance.

   New diagnostic measures, standardization and improved evaluation of desensitization materials, and more effective drugs are the immediate needs of allergy sufferers.

   The main need in the field of organ transplantation immunology is for tissue-typing tests for matching donors and recipients of organs. (24)

8. We have need for stepped-up research on the role of microbial agents in chronic disorders, such as emphysema, rheumatoid arthritis, and degenerative disorders of the respiratory and nervous systems.

   Comparative studies with animals have shown that viruses, for example, can cause chronic degenerative nervous system disorders such as scrapie in sheep. Such important leads need to be followed up. (24)

REFERENCE LIST

(1) Health Statistics from the U.S. National Health Survey--Series 10, No. 15., Acute Conditions, United States, July 1963-June 1964. National Center for Health Statistics, Washington, D. C.

(2) With the U.S. population estimated at 188,019,000 in 1963, each person caught an average of 1.4 infectious diseases, of which 1.1 were respiratory illnesses.

(3) Conference on Newer Respiratory Disease Viruses, U.S. Public Health Service, 1962.

(4) Statement of Dr. Clayton G. Loosli, Hastings Professor of Medicine, University of Southern California School of Medicine, before the Labor and Health, Education, and Welfare Congressional Subcommittee, 1965.

(5) National Vital Statistics Division, National Center for Health Statistics, Washington, D. C.

(6) Computations based on data (including 1963 median income of $6,249 and life expectancy of 69 years) from Statistical Abstract of the United States, 1965; and from U.S. Department of Commerce.

(7) Numerous publications on infectious diseases and allergic disorders; also Reference (22).

(8) Computations based on data from (1) above and from Health Statistics from the U.S. National Health Survey--Series 10, No. 18, Volume of Physician Visits, United States, July 1963-June 1964; and on an estimate of $7 per physician visit.

(9) Computations based on wholesale data from U.S. Department of Commerce and on retail markup of 65% reported in the trade journal Drug and Cosmetic Industry.

(10) Based on data from Medical Statistics Division, Office of the U.S. Army Surgeon General.

(11) Personal communication, The Allergy Foundation of America, New York, New York.

(12) Medical Tribune, January 26, 1966. "The Allergy Cases May be Double Early Estimates, MD Believes."

(13) Chronic Conditions and Activity Limitations--July 1961-June 1963, National Center for Health Statistics, Washington, D. C. 12,646,000 persons suffer from asthma and/or hay fever. In addition, 4,144,000 other allergic conditions are reported. Some of these conditions may include the asthma-hay fever sufferers who have other allergies. However, those suffering both asthma and hay fever are recorded as one figure, which reduces the condition count.

(14) The 1960 Census lists the population of New York State as 16,782,304.

(15) The Skin and Its Allergies, published by The Allergy Foundation of America, New York, New York.

(16) 1964 Annual Report of the U.S. Department of Health, Education, and Welfare--Report of the Food and Drug Administration.

(17) Data published by Children's Bureau, U.S. Department of Health, Education, and Welfare.

(18) Lowell, Francis C., and Franklin, William, "A Double-Blind Study of the Effectiveness and Specificity of Injection Therapy in Ragweed Hay Fever," New England Journal of Medicine, Sept. 23, 1965, p. 675.

(19) Physicians Desk Reference, 1965.

(20) National Institute of Allergy and Infectious Diseases, Bethesda, Maryland.

(21) Computation based on data from trade journal Drug and Cosmetic Industry, September 1965, p. 331.

(22) Opening Statements to Congress of the Director of the National Institute of Allergy and Infectious Diseases, 1965 and 1966; and the 1964 Annual Report of the U.S. Department of Health, Education, and Welfare, Washington, D. C.

(23) TIME Magazine, January 7, 1966.

CREDITS

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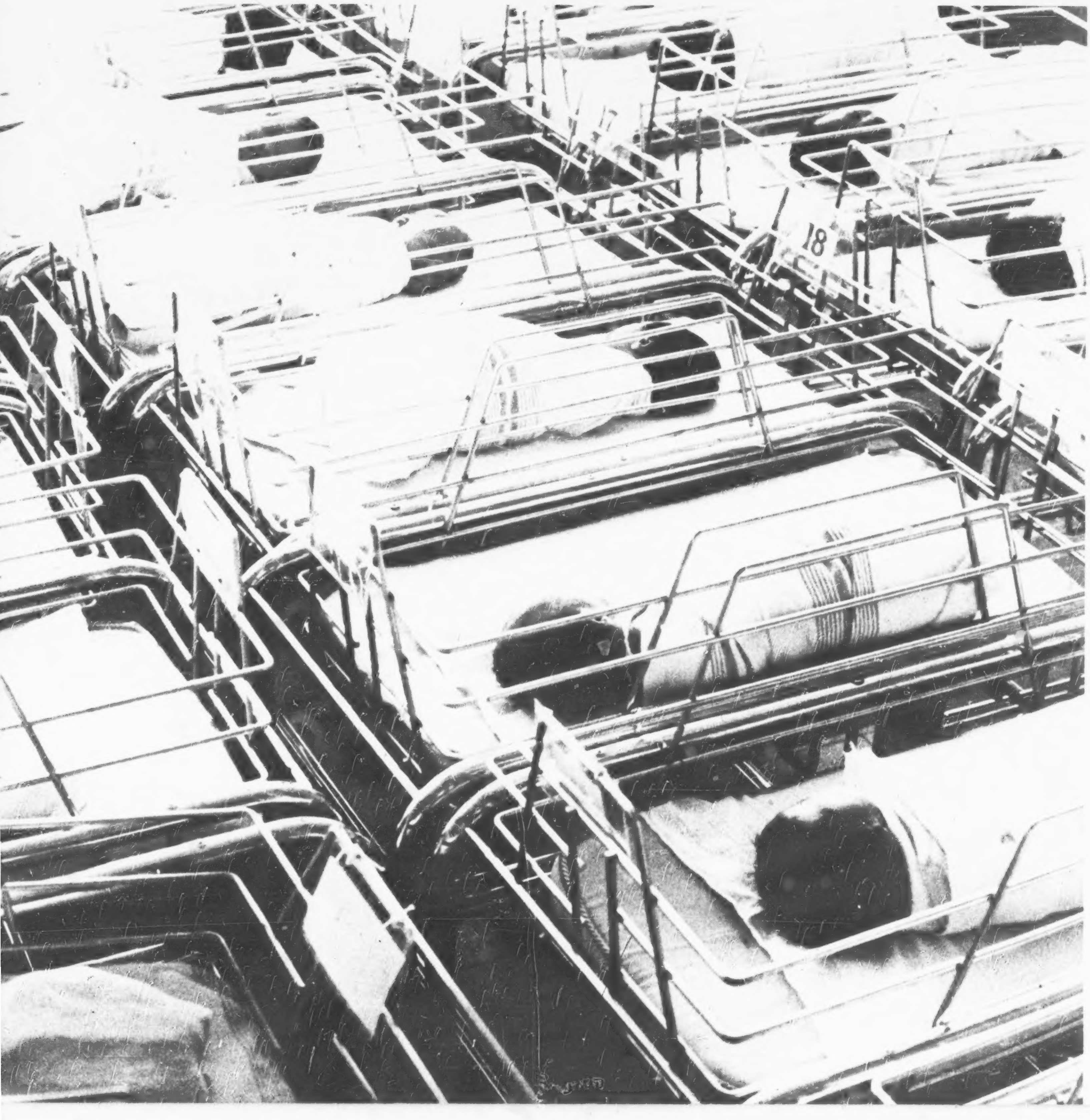

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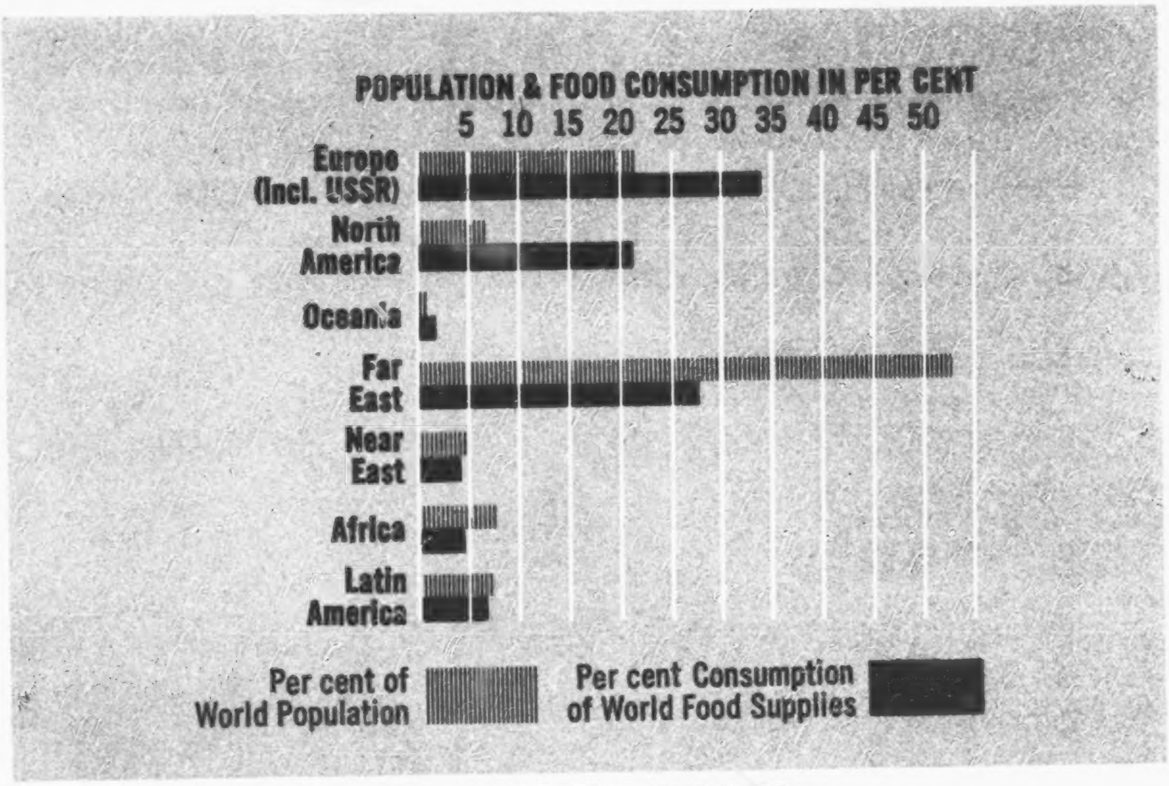
I. WHAT IS THE POPULATION PROBLEM? HOW MANY PEOPLE ARE HERE NOW?

1. The population of the world now totals an estimated 3.4 billion. (3)
2. The human race is growing at a rate of 198,000 daily. The pace of world population growth has more than doubled since 1945. Every day the number of new babies in the world, in excess of deaths, equals the entire population of St. Petersburg, Florida. (1)

II. WHAT IS THE RATE OF INCREASE IN THE POPULATION?

1. The rate of increase now is 7 times that of two centuries ago, mainly because modern medicine and sanitation have cut death rates dramatically, while in much of the world, birth rates remain unchecked. What we do, or fail to do, about the population crisis can make the difference between a good life - and famine, disease and grinding poverty for billions now alive and soon to be born. (1)
2. It took all of time from man's first emergence on earth for the human population to climb to 3 billion. At the current rate, it will take just 35 years to reach more than 7 billion. (1)
3. The world population at the end of 1965 was an estimated 3.4 billion. It is growing at an annual rate of 2%. (3)
    a. This means that each year the world population increases by some 68 million people, enough to populate a new nation larger than West Germany or the United Kingdom. (3)



(FAO WORLD FOOD SURVEY—1963)

III. WHAT IS THE CONDITION OF THE WORLD'S PEOPLE?

1. Two thirds of the world's people are underfed or undernourished, partly because there are now 68 million more mouths to feed in the world each year. Production of food fell short of population growth so there was less per capita to feed them. (1)

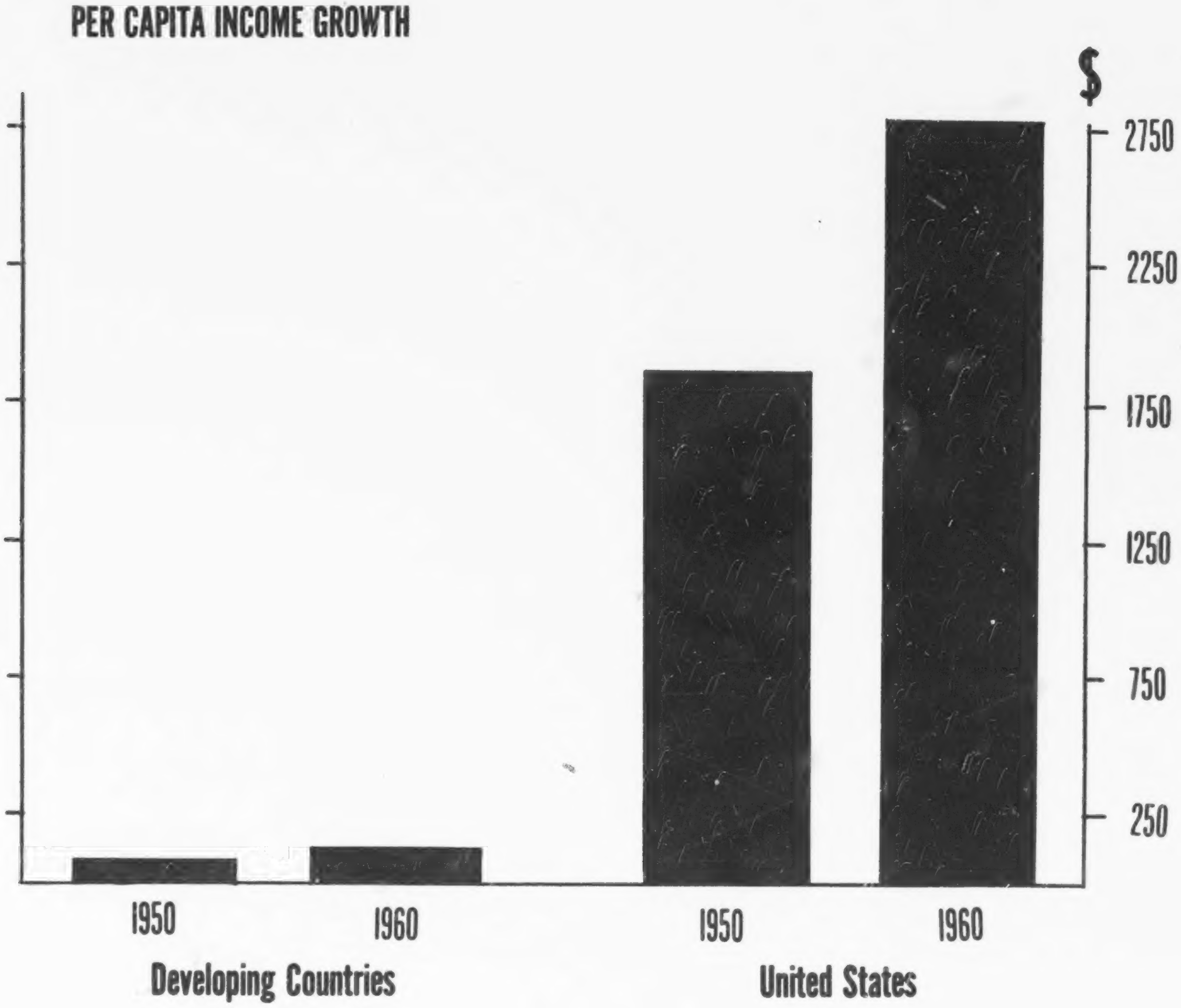
2. The world's hungry people are producing more children than food to feed them. (1)

   a. In Africa, Latin America and the Far East, food production is growing only 2/3 as fast as population. And in the latter 2 areas, per capita food production is still below the levels attained 25 years ago. (1)

   b. In Latin America, during a 5-year period, population increased 11.5%, yet food production increased only 6.5%. (3)

3. Economic and social progress is pitifully slow in comparison to the rate of population increase.

   a. The peoples of the developing nations are desperately poor. 75% of them (more than half the world's people) earn less than $100 a year, and 94% earn less than $275. (1)



Today, (1965) in the United States, per capita annual income is more than $2,500, and is increasing at a rate of about 6% each year. (1)

IV. WHAT DO LEADERS OF DEVELOPING COUNTRIES SAY ABOUT THEIR POPULATION PROBLEMS?

1. Leaders of some of the underdeveloped countries point up the problem: (1)

> "Our Five Year Plans have no meaning if the population grows at a rate one can never catch up with."
> –the late Prime Minister Nehru of India.

> "If we continue to increase at this rate, it will lead to a living standard little better than animals."
> –President Ayub Khan of Pakistan.

> "Population increase constitutes the most dangerous obstacle facing the Egyptian people in their drive toward raising the standards of production."
> –President Nasser of Egypt.

V. TO WHAT EXTENT IS OUR POPULATION IN THE UNITED STATES INCREASING?

1. At our present rate of growth, the population of the U.S. will double before the end of this century. There are about 195 million Americans today. There may be 380 million or more within 35 years. (1)
   a. Over 3 million babies are born annually. (1)

VI. HOW MANY CHILDREN WERE WANTED?

1. Among low-income-poorly educated parents surveyed recently, 54% of their children were unplanned and unwanted. (1)
2. Among the poor and poorly-educated surveyed recently: 2-3 children

were wanted, yet these parents actually had 4-6 children.

a. Only 1 of 10 of these mothers had access to family planning help. (4)

VII. WHAT ARE THE ECONOMIC ASPECTS OF INCREASED POPULATION IN THE U.S.?

1. Increasingly, we may expect our rapid increase in numbers to burden, rather than accelerate, our economy.
    a. Industrial productivity and the standard of living rather than the number of people determines purchasing power.
2. Increased expenditures - mostly public funds - needed to supply schools and colleges, health facilities, housing, water supplies, transportation, power, etc., for the expanding population will mean a substantially higher tax burden and bigger government. (1)
3. This year over 3 million new babies will be born in the U.S. and between 15% and 20% of all tax revenues will have to be spent simply to give them basic services. (1)

VIII. HOW WILL THE POPULATION INCREASE AFFECT OUR COSTS OF EDUCATION?

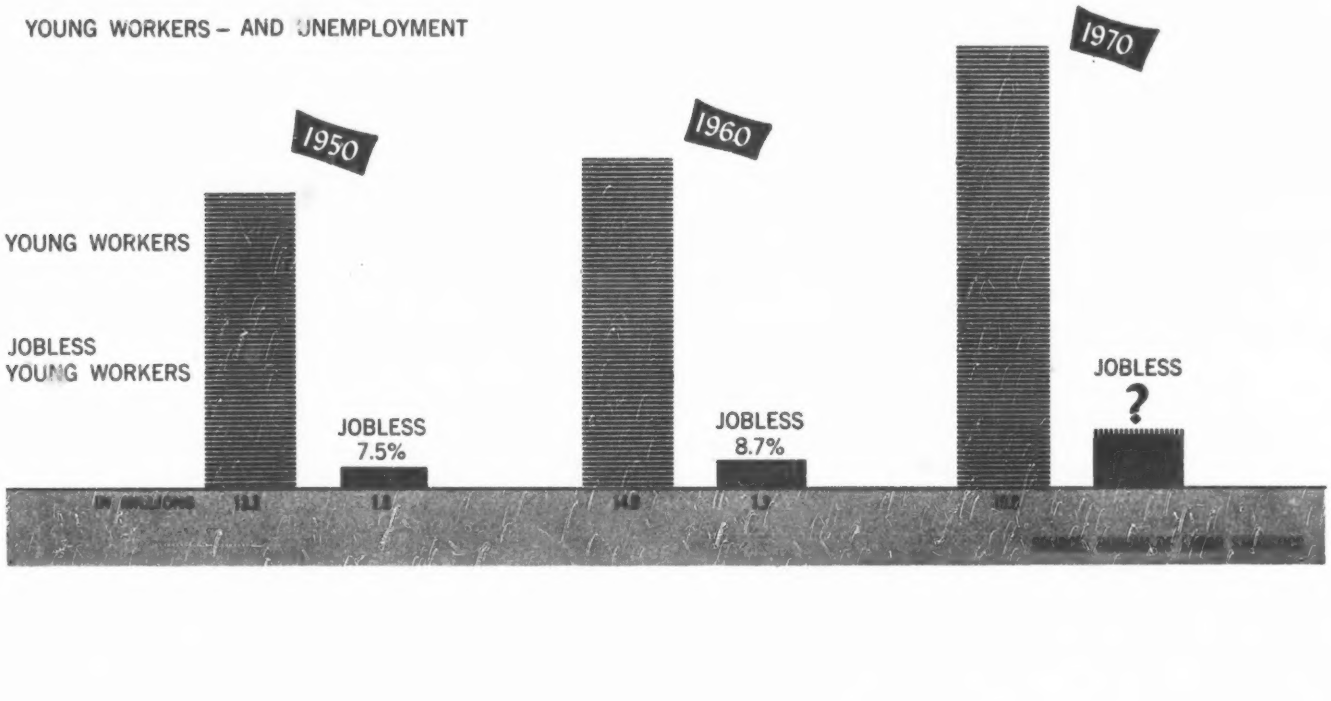
1. We are currently spending over $27 billion a year for public education, an increase of 144% in the last decade. (1)
2. More than 1/3 of state budgets, and nearly 45% of municipal budgets are being spent in this desperate effort to catch up with our population boom. Vastly increased Federal tax funds are soon to be added,

but still our children increase faster than we can build schools for them. (1)

3. Ten years ago our public elementary and high schools enrolled 30.7 million pupils, and were short more than 2.3 million seats. Today we have close to 42 million pupils, and are still short close to 2 million seats. (1)
4. By 1975 we will have another 6 million children in our public elementary and high schools, while enrollment in the public colleges (which more than doubled in the last decade) will nearly double again. (1)

IX. HOW WILL THE POPULATION INCREASE AFFECT OUR ALREADY EXISTING UNEMPLOYMENT PROBLEMS?

1. 1,500,000 new workers are entering the U.S. job market annually. But less than 200,000 new jobs are available, on the average, each year. Automation now threatens many of these. (1)



2. An estimated 26 million new workers will be pounding on the doors of the U.S. business and industry in the next 15 years, yet the demand for workers is remaining constant in some fields and is actually diminishing in others. (1)

3. Our present rate of unemployment, (about 5.2% of total labor force (8) which represents one of the most serious drags on our growth, can hardly be reduced while competition for jobs becomes more intense.

4. Unemployment in itself requires heavy outlays in welfare expenditures to assist those who are temporarily or permanently unable to find a productive niche in the new industrial picture.

X. WHAT IS THE RELATIONSHIP BETWEEN LARGE FAMILIES AND THE RISK OF POVERTY?

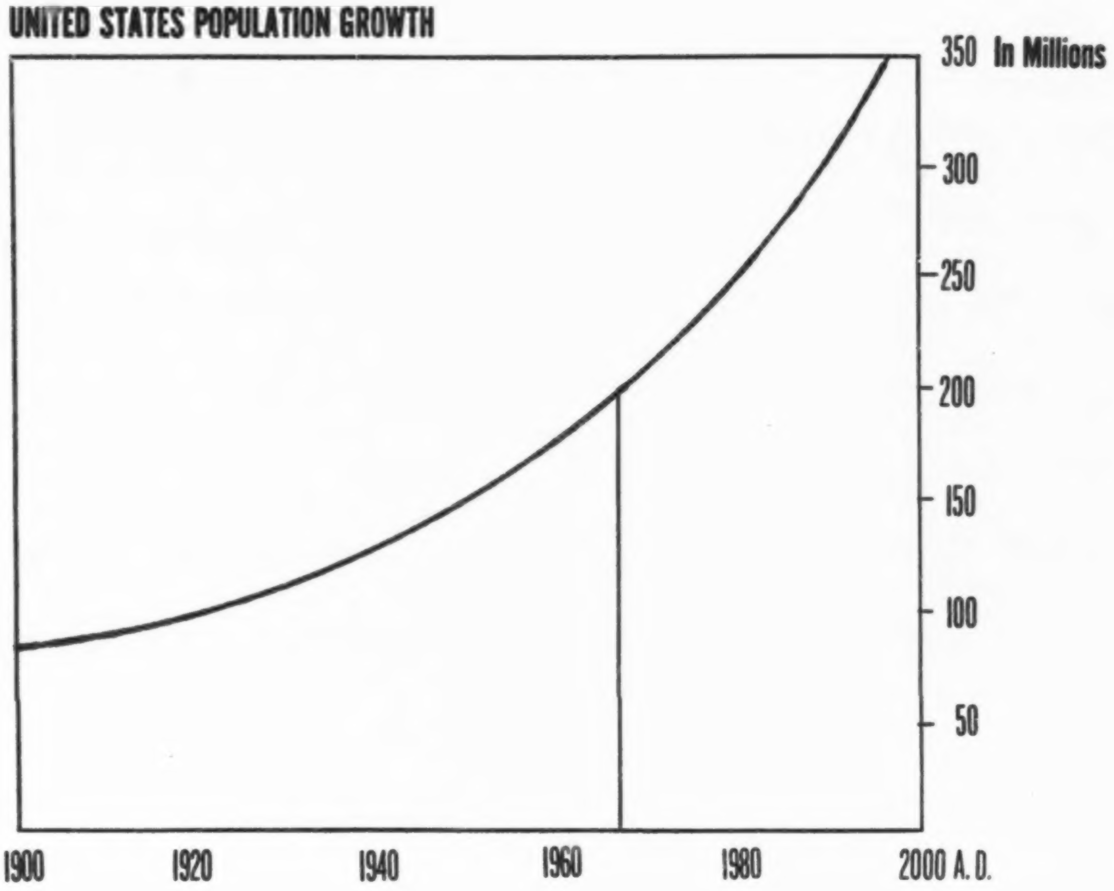
1. The risk of poverty among families with 5 or more children in the home is 4 times as great as that incurred by families with 1 or 2 children. (4)

2. More than a quarter of our population, or about 50 million people, are living at the poverty or near poverty level. 22 million of these are children – nearly 1/3 of all of our nation's youngsters. (4)

3. About 57% of families with 5 or more children fall in the poverty or near-poor category; 62% of those with 6 or more children. Only 22% of families as a whole fall into this category. (4)

4. These problems have increased over the past 5 years since there are

now about 30% more families with at least 5 children in the home than there were in 1959. (4)



XI. HOW ARE WELFARE COSTS AFFECTED BY OUR EXPANDING POPULATION?

1. Ignorance about birth control has led not only to a higher rate of childbearing among the poor and the uninformed than is experienced by the population generally, but contributes to the enormous human and financial costs consequent upon the growing rate of illegitimate births. (1)
2. The rate of illegitimate births has more than tripled in the past 25 years, from 7 per 1,000 unmarried women of childbearing age to

22 per thousand in 1963. The rate of illegitimacy among the poor is nearly 7 times higher. (1)

3. Between a fourth and a third of all children in foster care are born to unwed mothers. (1)
4. 20% of all Aid to Dependent Children recipients are unwed mothers and their children. (1)
5. Since 1958, the number of foster children has risen by 40,000, and annual government payments toward their care is up over $56 million. (1)
6. Our Aid to Dependent Children program has doubled in the last decade, to over 4 million cases, and the case load increases by 23,000 each month. (1)

   In 1955, the cost of supporting this group was $639 million; in 1965, the bill will be more than $1 billion higher. (1)

XII. WHAT IS BEING SPENT NATIONWIDE TO PROVIDE BIRTH CONTROL SERVICES?

1. All government agencies together - federal, state and local - spent a total of approximately $6 million for birth control services in 1965 in the U.S., including: (4)

   $2 million budgeted by public health departments utilizing local funds and matching federal grants;
   $1 million budgeted for Office of Economic Opportunity financed family-planning programs;
   $2 million (estimated) spent by tax-supported and voluntary hospitals;

$1 million (estimated) in reimbursements by local welfare departments for birth control given to relief recipients and such specific programs as the Congressional appropriation to the District of Columbia's public health birth control program. (4)

2. In 1965, Planned Parenthood's 130 Affiliates spent about $8.5 million to conduct 400 family planning centers throughout the country serving about 350,000 patients (3 times the number served in 1960.) (4)

XIII. WHAT MUST BE DONE TO MEET THIS CHALLENGE?

1. Research on a far larger scale must be supported on the biological and medical aspects of human reproduction so improved methods of fertility control are developed.
2. The American people must be informed of the enormous problems inherent in unchecked population growth here as well as abroad.
3. A sense of responsibility must be developed concerning marriage and parenthood, including the responsibility of bringing into the world only those children whom parents are prepared adequately to care for and educate.
4. Existing knowledge about birth control at low or no cost must be made available to those who need and wish such information and guidance.

XIV. WHAT IS CURRENTLY BEING SPENT FOR RESEARCH IN THIS AREA?

1. An estimated $13,027,446 is currently being spent for research

on fertility, sterility, and population dynamics. (See Appendix 1)

a. Of this amount, $8,655,020 was being expended by federal and local government agencies, and $4,372,426 was spent by private agencies (voluntary health agencies, foundations, etc.)

2. Of the $13,027,446 currently being spent for research on fertility, sterility, and population dynamics, only $2,369,825 was being spent specifically in the area of fertility control.

XV. WHAT ARE OTHER COUNTRIES DOING ABOUT THEIR POPULATION PROBLEMS?

1. The number of underdeveloped countries attacking their population problems is growing. Some have already adopted national population policies, while others have unofficial but permissive policies. (4)

2. The following countries have adopted official policies and are on various scales conducting national population programs: (4)

India
Korea
Pakistan
Singapore
Tunisia
Turkey
Mauritius
Bermuda
Haiti
Seychelles
China
United Arab Republic
Iran
Japan
South Africa

Countries with permissive policies and limited involvement in national planning programs:

Nepal
Jordan
Thailand
Taiwan
Barbados
Puerto Rico
Ceylon
Chile
Guatemala
Fiji
Honduras
Jamaica
Indonesia

Malaysia) Hong Kong)	These governments subsidize private family planning organizations.

Countries with experimental or pilot projects:

Rhodesia New Zealand

Countries in which there seems to be an emerging official interest in family planning:

Kenya	Peru	Uganda
Brazil	Venezuela	Argentina

3. Developed countries are beginning to recognize the adverse effect on their foreign aid programs of high rates of population growth in the countries receiving such aid. (4)
   a. Of the developed countries, the United States and Sweden are the only ones that have made birth control assistance a major part of their expanding foreign aid programs. (4)
   b. Former World Bank President Eugene Black put it this way: "I must be blunt . . . Unless population growth can be restrained, we may have to abandon for this generation our hopes of economic progress in the crowded lands of Asia and the Middle East." (1)

XVI. WHAT ARE SOME OF THE RESEARCH LEADS TO HELP FAMILIES HAVE BABIES BY CHOICE AND TO HELP SLOW DOWN THE POPULATION EXPLOSION?

1. Among possible new potential methods of contraception now being researched or developed, are the following:

a. Periodic vaccination against unwanted fertility;

b. A type of sterilization completely harmless and reversible;

c. Pills taken less frequently than is now necessary;

d. Injections to be given once a month or every few months. (4)

2. Much of the research in this general area is in the social sciences to assess implementation of birth control programs and to deepen our understanding of the motivations and attitudes associated with family planning.

3. Among the relatively new trends in basic research on reproduction are the study of the role of immunologic phenomena in the process and the systemic exhibition of agents adversely affecting germ cells or the conceptus, as birth control measures. (5)

XVII. HAS MEDICAL RESEARCH PAID OFF IN THIS AREA? YES.

1. The world's first effective birth control pill, perfected by Dr. Gregory Pincus of the Worcester Foundation for Experimental Biology and Dr. John Rock of Harvard, has been a major step toward voluntary population control. (4)

2. The Intrauterine Device (IUD) has been widely accepted and found to be a safe, effective and inexpensive new method of contraception. (4)

3. Other devices have been and are being developed and improved in the effort to find new cheap and effective means of controlling fertility.

XVIII. HOW MANY MATERNAL AND INFANT DEATHS OCCUR IN THE UNITED STATES EACH YEAR?

1. In 1964 there were 1,343 maternal deaths (deaths from deliveries and complications of pregnancy, childbirth and the puerperium). (6)
2. 99,783 infants under one year of age died in the same year. (6) Of these, nearly 75% failed to complete the first 28 days of life. (6)
3. Fetal deaths in 1963 totaled 64,700 (gestation period 20 weeks or more). (6)

XIX. HAS MEDICAL RESEARCH PAID OFF IN REDUCING MATERNAL AND INFANT DEATHS? YES!

1. Between 1944 and 1964, the maternal mortality rate has been reduced 85% -- largely due to antibiotics. In the last 10 years alone, the maternal mortality rate has dropped 36%. (6)
    a. The probability of dying from conditions associated with deliveries and complications of pregnancy, childbirth, and the puerperium has now been reduced to 1 maternal death for about every 3,000 live births. In 1940, the risk was 1 maternal death for every 266 live births. (6)
2. Between 1944 and 1964 infant mortality rates have been cut 39%. (6)
    a. Mortality has declined much more rapidly among infants surviving the first 28 days of life than among infants less than 28 days old. This is due in part to the sharp reduction in mortality from influenza and pneumonia, from gastro-intestinal diseases, and

from other communicable diseases - all of which affect chiefly the age group 28 days to 11 months. (6)

XX. WHAT IS THE ROLE OF PLANNED PARENTHOOD — WORLD POPULATION?

1. Planned Parenthood-World Population is the leading national voluntary agency working in this area. Its objective is to make effective family planning available to all, so that each new infant can be a wanted child born by choice and not by chance to responsible parents. In addition, the Federation has made it its goal to alert the American people to the gravity of the world population crisis and to the need for expanded public and private programs to cope with it.

2. The Federation is made up of 132 local affiliates, organized in 36 states and the District of Columbia. In addition, 38 committees not yet affiliated were formed in 1965. (7)

XXI. HOW MUCH DOES PLANNED PARENTHOOD RAISE AND HOW ARE THESE FUNDS SPENT?

1. Funds raised by Planned Parenthood and its affiliates in 1965 totaled $11,225,068. Of this total, $2,867,348 represented patients fees. (7)

2. Expenditures by the National Office in 1965 were as follows: (7)

Administration	$ 128,981.
Operations	231,806.

Field Service	238,851.
Medical	183,758.
Research	233,700.
Information & Education	357,233.
Program Planning & Development	59,672.
Fund Raising & Publicity	320,830.
Other Expense	7,873.
	$1,744,734.
Payments to affiliated organizations (Int'l Planned Parenthood Federation; PP of Manhattan and Bronx, other affiliates)	2,089,785.
	$3,834,519.

XXII. WHAT IS THE PROGRAM OF PLANNED PARENTHOOD-WORLD POPULATION?

1. The program of Planned Parenthood-World Population is implemented by the national headquarters and the affiliates through:

   a. Service

   Medical services in 3 areas – birth control, infertility therapy and marriage education – are provided by physicians in 275 centers operated by affiliates, under the supervision of local and national medical committees. In addition, PP-WP and affiliates work with public hospitals, health departments and welfare agencies on programs to provide services through tax-supported facilities. (1)

   (a) Of every 100 new patients visiting these Centers in 1964: (7)

   63 had incomes of $74 or less per week.
   35 were on welfare or have incomes of less than $50 a week.

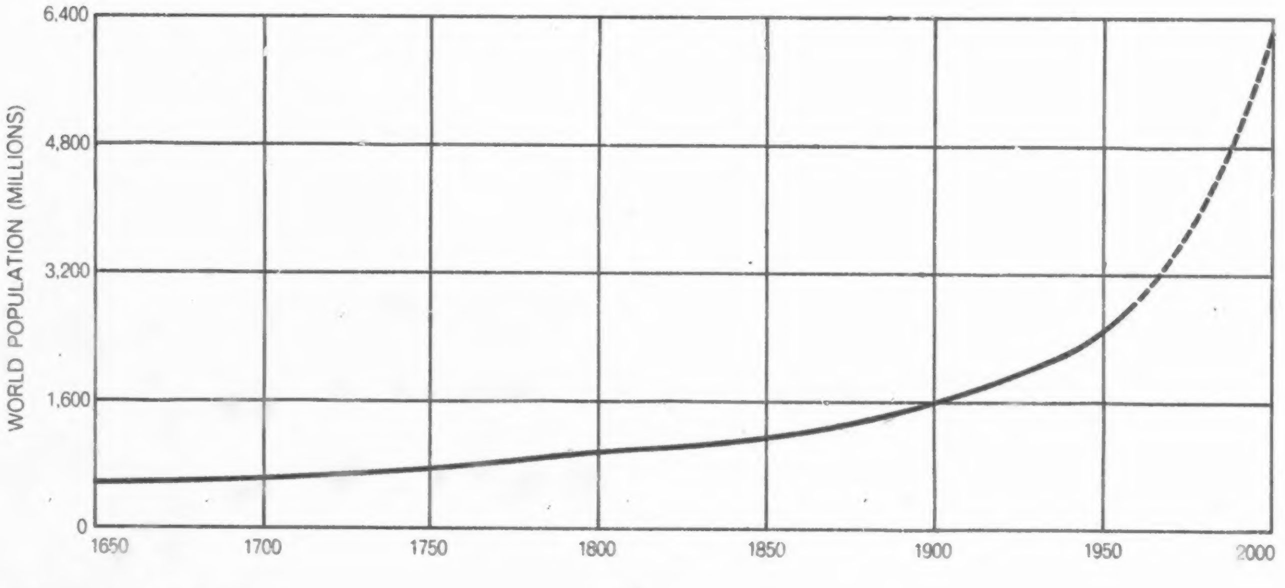
80 were less than 30 years old.
21 were less than 20 years old.
69 had fewer than 4 children.

b. Research

PP-WP encourages and supports investigations by qualified scientists to evaluate methods of fertility control, to assess implementation of birth control programs and to deepen our understanding of the motivations and attitudes associated with family planning.

c. Education

A broad spectrum of education activities, ranging from dissemination of knowledge of family planning to individuals to national conferences of distinguished leaders on the population problem.



Source: *Scientific American, Sept. '63*

XXIII. WHAT IS NEEDED TO HELP SOLVE THE POPULATION PROBLEM?

1. More Federal funds for the Anti-Poverty Program.
2. More funds for the U.S. Public Health Service's activities in this field.
    a. $100 million could be well spent by the U.S. Public Health Service for family planning services and research in this area.
3. More funds for the Planned Parenthood - World Population programs.

APPENDIX I

Current Research on Fertility, Sterility, and Population Dynamics

Table 1. List of Agencies Reporting Research Projects

Supporting Agency	Total number of projects	Number reporting funds	Funds	Relevant to fertility control		
				Number of projects	Number reporting funds	Funds
Total	854	714	$13,027,446	147	140	$2,369,825
Public Agencies (United States)	680	552	$ 8,655,020	61	56	796,326
Federal Agencies						
Atomic Energy Commission	38	19	781,969	-	-	-
Dept. of Agriculture	192	166	1,157,640	11	10	55,257
Dept. of Defense	7	4	78,456	1	1	5,000
Dept. of Health, Education & Welfare	298	291	5,839,492	41	40	693,974
Dept. of the Interior	22	16	105,372	3	2	9,000
National Science Foundation	52	52	649,504	2	2	23,400
Tennessee Valley Authority	1	-	-	-	-	-
Veterans Administration	4	-	-	-	-	-
State and Local Agencies						
Health Research Council, City of N. Y.	3	3	42,087	1	1	9,695
State Funds a/	63	1	500	2	-	-

(Continued)

a/ The number of projects supported by funds of individual states is shown at the end of the table. Only one of these reported the amount of support (Colorado, $500). Two of the State projects were considered relevant to fertility control (one in Nevada and one in New York).

Source: "A Survey of Current Research on Fertility, Sterility, and Population Dynamics", March 1, 1965. Prepared by the Nat'l Institute of Child Health & Human Development, Nat'l Institutes of Health, Bethesda, Maryland 20014.

APPENDIX I

Current Research on Fertility, Sterility, and Population Dynamics

Table 1. List of Agencies Reporting Research Projects (Continued)

Supporting Agency	Total number of projects	Number reporting funds	Funds	Relevant to fertility control Number of projects	Number reporting funds	Funds
Private Agencies	174	162	$ 4,372,426	86	84	$1,573,499
American Cancer Society	1	1	14,700	-	-	-
American Medical Association	1	1	100	-	-	-
Association for Aid to Crippled Children	2	2	21,708	-	-	-
California College of Medicine	1	-	-	1	-	-
Childs (Jane Coffin) Memorial Fund for Medical Research	1	1	2,600	-	-	-
Ford Foundation	36	36	2,705,953	13	13	432,733
Foundations Fund for Research in Psychiatry	2	2	24,592	-	-	-
Human Ecology Fund	1	1	700	-	-	-
Labor Foundation	11	-	-	1	-	-
Medical Foundation	1	1	9,732	-	-	-
Medical Research Council of Canada b/	2	2	6,100	1	1	4,100
National Cancer Institute of Canada	1	1	10,000	-	-	-
Picker Foundation	1	1	6,850	-	-	-
Population Council	105	105	1,500,089	69	69	1,081,664
Purdue Research Foundation	1	1	1,000	-	-	-
Rockefeller Foundation	2	2	66,002	1	1	55,002
Society of the Sigma Xi	5	5	2,300	-	-	-

b/ Although this agency awards Canadian government funds, it is included under private agencies because it is the only foreign agency in this category.

Source: "A Survey of Current Research on Fertility, Sterility, and Population Dynamics," March 1, 1965. Prepared by the Nat'l Institute of Child Health and Human Development, Nat'l Institutes of Health, Bethesda, Maryland, 20014.

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(7) Planned Parenthood-World Population Annual Report 1965.

(8) Statistical Abstract of the United States 1965.

CREDITS

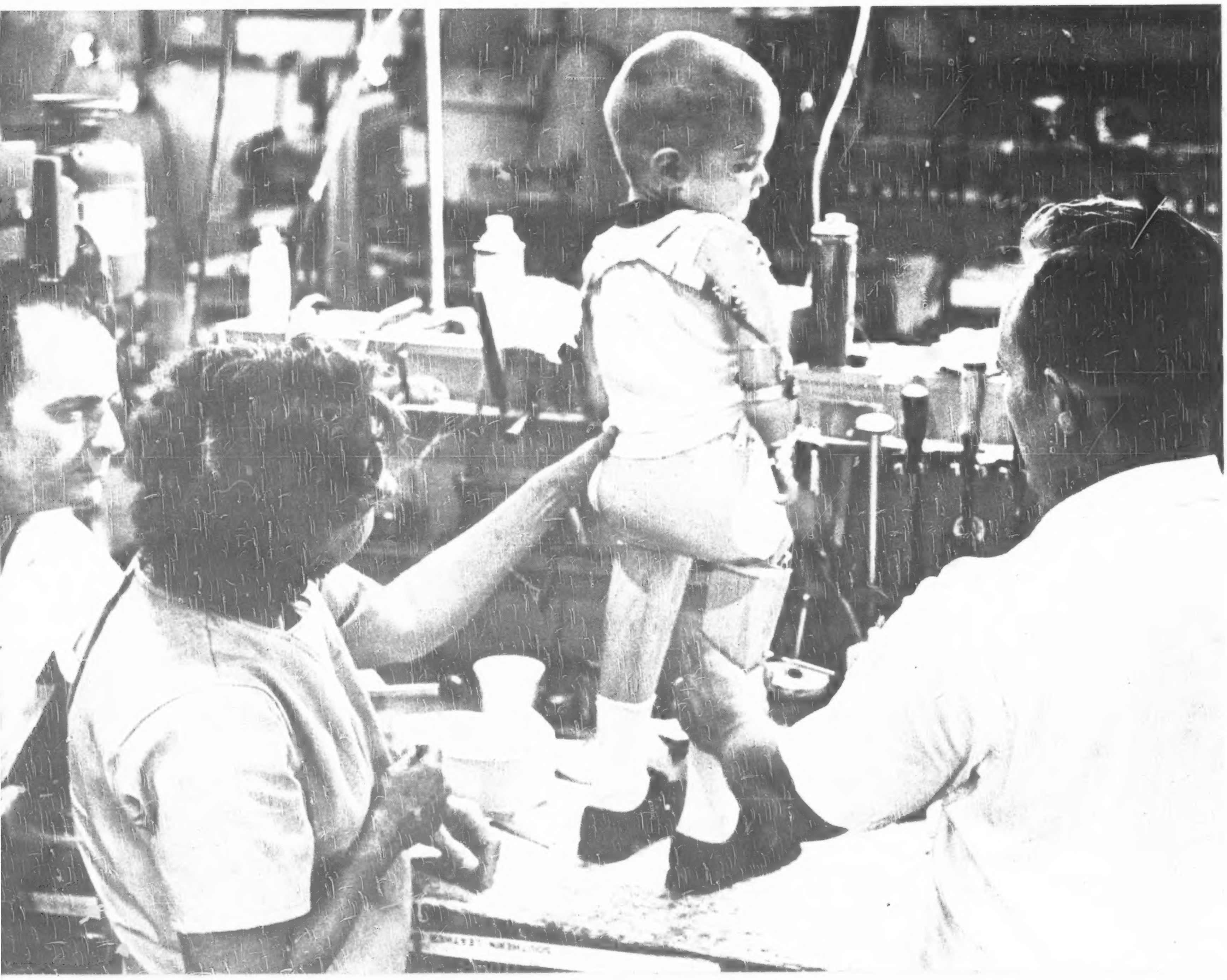
Cover Photograph: Courtesy World Health Organization.
Charts P. 2-3, 6-8: Courtesy Planned Parenthood - World Population.
Chart P. 18: Courtesy Scientific American

WHAT ARE THE FACTS ABOUT

DISABLED PEOPLE?

WHAT CAN BE DONE FOR THEM THRU

REHABILITATION?



WHAT ARE THE FACTS ABOUT DISABLED PEOPLE IN THIS COUNTRY AND WHAT CAN BE DONE FOR THEM THROUGH REHABILITATION?

This fact sheet has been compiled from
the best available information by the

National Health Education Committee, Inc.
866 United Nations Plaza, New York, N.Y. 10017

1966

I. HOW MANY PEOPLE IN THE UNITED STATES REQUIRE VOCATIONAL REHABILITATION?

1. In the United States today, there are an estimated 3,700,000 disabled persons who need, want, would benefit from, and are eligible for vocational rehabilitation services under the State-Federal Vocational Rehabilitation Program, to enable them to work in the competitive labor market, in sheltered employment, or in their own homes. (1)
2. Each year more than 500,000 disabled persons enter the group who need vocational rehabilitation and are eligible for it. (1)

II. WHAT ARE THE MAIN CAUSES OF DISABILITY AMONG AMERICANS?

1. Chronic diseases (which includes such diseases as arteriosclerosis, (the main cause of heart attack and strokes), poliomyelitis, tuberculosis, mental illness, multiple sclerosis, Parkinson's Disease, epilepsy, diabetes, cancer, arthritis and various conditions affecting sight and hearing and congenital conditions like cerebral palsy) account for 87% of all disabling conditions. The remaining disabilities are caused by accidents and injuries. (2) (3)

III. IS DISABILITY ONLY A PROBLEM OF OLD AGE?

1. Rheumatic fever, cerebral palsy, epilepsy, poliomyelitis, for the most part, cripple the very young.

a. For persons under 15 years of age, 1 in about 65 not in institutions is limited in some way because of chronic conditions.

b. Of persons between the ages of 15 and 24, 1 in about 25 not in institutions is limited in some way because of chronic conditions. (4)

2. The chronic diseases, such as those listed in Question II, especially those due to arteriosclerosis resulting in heart attacks and "strokes", take their toll in middle or later life.

3. On any given day, nearly 1 in every 2 men and women not in institutions aged 65 or more (36% of the 22,200,000 persons of all ages with limiting chronic conditions) is limited in some way because of chronic diseases or impairments. The proportion with limited activity is more than 4 times as large in this age group as that for the remaining population. (5)

IV. WHAT ARE THE PUBLIC COSTS OF DISABILITY?

To provide maintenance and medical care for disabled people through public assistance programs is now costing the public about $1,200,000,000 annually, plus loss of productivity to the economy and loss in taxes. (6)

1. In 3 programs authorized by the Congress, and in the non-Federal program of general assistance, estimated annual payments to recipients in fiscal year 1965 totaled:

Aid to the Blind	$ 99,000,000
Aid to the Permanently and Totally Disabled	$ 515,000,000

Aid to Families with Dependent Children	$ 386,000,000
General Assistance Programs	$ 200,000,000
Total	$1,200,000,000

V. HOW MUCH DO DISABILITIES COST THE VETERANS ADMINISTRATION?

For service as well as non-service-connected disabilities, the Veterans Administration paid in 1964 in compensation and pension benefits an estimated $2,811,000,000 to some 3,196,000 living veterans. (7)

VI. DOES REHABILITATION PAY? YES!

1. The State-Federal Vocational Rehabilitation program is a public service to prepare physically or mentally handicapped persons for employment and place them in suitable jobs. It is administered by especially constituted rehabilitation agencies in all of the States and territories, with financial aid and leadership from the Vocational Rehabilitation Administration of the Department of Health, Education, and Welfare. In the fiscal year ending June 30, 1965, 134,859 persons were rehabilitated under the program, and 24,166 of these were formally receiving some public assistance grants or were in tax-supported public institutions at the time they were accepted for services. (1)
   a. Of these 24,166 persons, 17,176 had been receiving public assistance grants at the estimated rate of $21 million per year. (1)
   b. With their rehabilitation completed, the 17,176 clients will earn

Abilities, Inc., an industrial facility, employs more than 450 physically disabled workers. It is engaged in electronic assembly, industrial packaging and engraving glassware. Here, a triple amputee imprints wires to rigid specifications.

an estimated $38 million in the first year after rehabilitation. (1)

c. The estimated $20 million spent to rehabilitate these people is only about 5% less than what it would cost to maintain them at public expense for one year, but, as a consequence of their rehabilitation, these people will continue their earnings for many years, and will eventually return in income and other taxes far more than was spent to rehabilitate them. (1)

2. **What is the Manpower Gain to the Nation?**

The 134,859 persons rehabilitated in FY1965 contributed an annual rate of about 188 million man-hours of work to our Nation's production. They had been contributing about 39 million man-hours of work on an annual basis at the time of acceptance for services.

3. **What is the Economic Gain to the Nation?**

The first-year earnings of the 134,859 persons rehabilitated during 1965 through the State-Federal Vocational Rehabilitation Program alone contributed an estimated $297 million to the economic wealth of the Nation. (1)

4. **What is the Return from the Government Investment?**

a. In fiscal 1965 the federal grants and state matching funds to provide vocational rehabilitation services under Section 2 (basic support) of the Vocational Rehabilitation Act amounted to:

Federal grants	$96.9 million
State matching funds	$60.7 million
Total	$157.6 million*

*Includes administration, counseling and guidance, medical service, job training, occupational tools and equipment, job placement and other services to clients, and expenditures for the establishment of rehabilitation facilities and workshops. (8)

b. In one year, the persons rehabilitated by this program will pay an estimated $20 million to the Federal Government in income taxes, plus about $5-7 million in State and local income and sales taxes. (1)

c. At this rate in 5 years they will pay back in Federal income taxes the total Federal funds invested in the Vocational Rehabilitation Program during 1965.

VII. HOW MANY PEOPLE WERE REHABILITATED IN 1965?

1. The 134,859 disabled persons rehabilitated to useful employment in fiscal 1965 set a new record for a single year's achievement under the State-Federal program. This was an increase of 13% over the 119,708 rehabilitated in 1964. The approximate costs for Section 2 (basic support) for 1965 were $157.6 million (Federal - $96.9 million; State - $60.7 million). This increase in the number of persons rehabilitated indicates the rate at which both the Federal and State governments are increasing their efforts. But even at this increased rate, the program rehabilitates only about 25% of the number of people who come to need rehabilitation each year.

VIII. WHO SERVES THE DISABLED?

1. The State-Federal Program of Vocational Rehabilitation administered by the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare. Support grants are allocated to States on the basis of population and fiscal ability and require matching with State funds. The current average is about 6 Federal

dollars for 4 State dollars.

2. Other public programs, such as The President's Committee on Employment for the Handicapped, the Children's Bureau of the Social Security Administration, the Department of Labor, Veterans Administration, the Department of Defense; as well as state and local welfare departments and hospitals.

3. A number of voluntary organizations serve the handicapped directly or indirectly and in varying ways. Some render actual services or arrange for and underwrite the costs of services; others are engaged principally in support of research and public education. Well known among these groups are the National Foundation, The National Society for Crippled Children and Adults, National Tuberculosis Association, American Cancer Society, Epilepsy Association of America, American Diabetes Association, National Multiple Sclerosis Society, Arthritis and Rheumatism Foundation, American Foundation for the Blind, American Hearing Society, Goodwill Industries, National Industries for the Blind, United Cerebral Palsy, and the National Rehabilitation Association.

IX. WHAT FACILITIES ARE AVAILABLE FOR REHABILITATION:

1. Rehabilitation Centers - which are institutional type facilities bringing together the medical, vocational, psychological, placement, social and other services needed to plan and carry out a program of

rehabilitation. Examples of centers of the general type are the Woodrow Wilson Center at Fisherville, Va.; the Georgia Rehabilitation Center at Warm Springs; the Institute for the Crippled and Disabled in New York, N. Y.; the Institute of Physical Medicine and Rehabilitation in New York, N. Y.; and the Kessler Institute of Rehabilitation, West Orange, New Jersey. (9) (10)

2. Rehabilitation Centers for the Blind - Some examples are: Industrial Home for the Blind, Brooklyn, N. Y.; North Carolina Rehabilitation Center for the Blind, Butner, N. C.; South West Rehabilitation Center, Little Rock, Ark.; Kansas Rehabilitation Center for Adult Blind, Topeka, Kansas; St. Paul's Rehabilitation Center for the Blind, Newton, Mass.; Minneapolis Society for the Blind, Inc., Minneapolis, Minn.; Adjustment Training Center, Florida Council for the Blind, Holly Hill/ Daytona Beach, Florida.

3. Sheltered Workshops - These were developed to meet the need for special facilities in which disabled people can be prepared for work in regular industries. For those unable to meet the demands of competitive employment, the workshop may provide extended employment where the disabled may produce according to their capabilities. It is estimated there are about 1,000 sheltered workshops in the United States. Goodwill Industries of America, Inc., has local units in many communities - 128 sheltered workshops and 35 affiliated branch workshops in the United States and 21 located in 9 foreign countries. National Industries for the Blind has approximately 60

affiliated workshops. Other sheltered workshops include: The Altro Workshop in New York City, facilities operated by the Volunteers of America, approximately 45 workshops for the blind unaffiliated with the N. I. B. and workshops operated by other voluntary groups, such as the National Society for Crippled Children and Adults, the Jewish Vocational Service, and local associations for retarded children. (11)

4. Hospitals with Special Services

5. Speech and Hearing Clinics - The January, 1965 issue of *American Annals of the Deaf,* lists 381 speech and hearing clinics in the United States and Canada, including:

In colleges & universities	162
In hospitals	85
Medical schools	66
Privately operated centers	49
In schools for the deaf	19
Total	381

Hearing societies, crippled children's programs, and other special educational services have speech and hearing clinics not included here.

X. HOW MANY PEOPLE ARE TRAINED IN REHABILITATION METHODS AND WHAT IS THE NEED?

Rehabilitation, a group effort rather than a program of a single discipline, requires trained personnel in medicine, counseling, psychology, physical therapy, occupational therapy, social work, selective placement and related professions. (12)

Physicians

There is an increasing recognition that rehabilitation is a part of total medical care. Many more refresher courses in modern rehabilitation methods are needed to reach a greater proportion of the 286,000 physicians licensed to practice in the United States.

In September 1965 the National Rehabilitation Institute in Saigon was producing 6 old fashioned ill-fitting artificial limbs per month. Under a project financed by the Agency for International Development, the World Rehabilitation Fund has increased production to over 400 modern limbs and braces per month. Here its President, Dr. Howard Rusk, plans the project with Mr. Juan Monros, the instructor.

Psychologists

The American Psychological Association reports that in 1965 there were approximately 16,000 qualified psychologists in the United States. Of these about 5,900 are employed as clinical psychologists and 1,800 in counseling and guidance, a number far short of the needs for mental hospitals, mental hygiene clinics and rehabilitation.

	No. of Professionals and Educational Training Facilities	The Needs
Physiatrists	As of August, 1965 about 600 physiatrists in the United States are diplomates of the American Board of Physical Medicine and Rehabilitation.	It has been estimated that an additional 500 specialists could be used at once. The need will increase.
Physical Therapists	There is an estimated supply of 12,000 physical therapists in this country at present. The 44 approved schools, with a senior class and certificate capacity of approximately 1,100 produce about 1,050 graduates a year.	Currently another 4,500 physical therapists are needed by hospitals alone, and there is a total need for 13,500 additional physical therapists for replacements or expanding programs. By 1967 about 1,100 graduates a year are expected.
Occupational Therapists	There are an estimated 8,000 registered occupational therapists in the U.S. today. In 1964-65 the 32 approved schools of occupational therapy had a student enrollment of about 2,600.	Currently there is a need for 12,000 additional occupational therapists.
Social Workers*	It is estimated that there are 125,000 social workers in practice of which about 40,000 are graduates of schools of social work in the U.S. and Canada and a population enrollment of approximately 8,200 in U.S. schools.	Current needs for medical and psychiatric social workers total about 6,000 annually, with a minimum overall need for 15,000 new social workers in all fields each year. *Medical and psychiatric social workers are reported together.
Rehabilitation Counselors	About 3,300 counselors were employed in 1965 in the State-Federal vocational rehabilitation program. In 1966 it is	An additional 1,200 counselors trained in rehabilitation techniques including ade-

	No. of Professionals and Educational Training Facilities	The Needs
	estimated that about 4,100 counselors will be employed in State agencies, and about 5,300 in 1967. Another large group of rehabilitation counselors serves veterans in the Veterans Administration and still others are employed in rehabilitation centers, sheltered workshops and hospitals.	quately trained professional personnel to work with such disabled groups as the blind, deaf, mentally retarded and other special groups, will be needed annually for several years in State vocational rehabilitation agencies. It is estimated that an additional 1,000 rehabilitation counselors will be needed for staffing private rehabilitation centers, sheltered workshops and hospitals.
Speech and Hearing Therapists	In January 1966 the total membership of the American Speech and Hearing Association was approximately 13,000. Of this number, 8,000 are certified either in speech or hearing. Although most speech and hearing therapists work with children in the public school system, the number of speech pathologists and audiologists working with adults in rehabilitation centers, speech and hearing centers, and hospitals has increased markedly.	An estimated 1,500 speech and hearing therapists should complete graduate training each year, as compared with about 850 now graduating each year.

Placement Specialists

The State Employment Services employ placement specialists who devote most or all of their time to disabled clients. The Vocational Rehabilitation and Education Program of the Veterans Administration also includes placement specialists, as do the State Vocational Rehabilitation Programs.

Teachers of Special Education for the Disabled

Approximately 20,000 special teachers now serve the handicapped from nursery to high school age.

In speech correction programs for children alone, at least 4,000 persons are presently engaged.

XI. HOW MUCH IS THE VOCATIONAL REHABILITATION ADMINISTRATION SPENDING FOR RESEARCH?

Federal grants are being made to public and voluntary agencies to carry out research which holds promise of making a substantial contribution to the solution of vocational rehabilitation problems common to all or several states.

From the beginning of the research and demonstration grants program in 1955 through June 30, 1965, 943 projects were activated, for which over $78 million of federal funds were obligated. For the fiscal year 1966, the appropriation for this program is $20,570,000. Projects are funded for varying lengths of time, although the average is for three years. Geographically, projects have been approved in 50 States, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands. (12) The program includes studies on administrative and program problems, evaluation and counseling, rehabilitation workshops and centers, and international exchange of information as well as projects covering a wide range of disabilities. (An annotated list of projects and a bibliography of published results are available from the VRA on request.) (13)

XII. HOW DOES THIS COMPARE WITH THE ANNUAL COST OF DISABILITY?

1. In contrast to the $20,570,000 currently available to the Vocational Rehabilitation Administration for research to develop better methods and techniques of rehabilitation:

$1,200,000,000	was estimated to be spent in FY 1965 to provide maintenance and medical care for disabled people through public assistance programs;
$2,811,000,000	is being spent annually by the Veterans Administration for service-connected as well as non-service connected disabilities in compensation and pension payments to veterans;
$ 157,600,000	was spent (in fiscal 1965) as total program cost of the State-Federal program of vocational rehabilitation services for basic support.
$4,168,600,000	Total

2. In contrast to the $4.1 billion annual cost of disability, we are currently spending only an estimated total of $500 million from all major sources, for research against the diseases which create these disabilities (heart & circulatory diseases, cancer, mental illnesses, multiple sclerosis, muscular dystrophy, epilepsy, cerebral palsy, Parkinson's disease, deafness, blinding eye diseases, arthritis, etc.) (14)

Thus, we are spending only 12% of the annual cost of disability to try to find the improved treatments and methods of prevention of these diseases which would make rehabilitation unnecessary.

XIII. WHAT IS THE ESTIMATED COST OF THE REHABILITATION OF ALL PEOPLE WHO SHOULD BE HELPED?

The cost of rehabilitating the 3,700,000 persons who need vocational rehabilitation services if they are to perform gainful work would be about $4.1 billion, based on present costs of approximately $1,100 per person rehabilitated in the vocational rehabilitation program. This is the estimated cost to the State-Federal program only, and excludes any consideration of the costs of teaching and training the additional personnel needed to rehabilitate these people and the cost of construction of the facilities required for these expanded training and rehabilitation programs. (1)

XIV. HOW MUCH WOULD THIS PROFIT THE FEDERAL GOVERNMENT?

It is estimated that the rehabilitation of these 3,700,000 eligible disabled persons would mean:

1. An increase in annual earning rates of approximately $6.8 billion. (1)
2. Federal income tax payments of $505 million annually. This tax yield in 8 years would equal the estimated Federal expenditure for rehabilitation of $4.1 billion for these 3,700,000 persons. (1)
3. A reduction of millions of dollars annually in public assistance payments to these disabled persons.
4. Additional benefits, not reflected in dollar figures but of extreme value accrue in the form of:

a. additions to the labor force of a larger number of capable workers, including thousands of skilled employees to fill vacancies in critical occupations;

b. the secondary benefits of sound and secure families in which the problems and the costs of delinquency, crime, etc., are reduced; and

c. reduction in the burden upon scarce medical personnel and upon medical and domiciliary care institutions.

XV. WHAT IS NEEDED TO REDUCE THE PROBLEM OF DISABILITY AND ITS EFFECTS?

While an estimated 3,700,000 need vocational rehabilitation in the U.S. today and an additional 500,000 or more come to need it each year, only 134,859 disabled persons were rehabilitated to useful employment in fiscal 1965 under the State-Federal Vocational Rehabilitation Program.

1. Adequate Federal funds must be provided to rehabilitate the backlog of over 3.5 million persons needing rehabilitation.
2. Funds for research against the diseases which cause disability should be increased so that fewer people will need rehabilitation in the future.
3. Additional funds must be made available for
    a. continuing and expanding research aimed at discovering new principles and concepts basic to the understanding of the rehabilitation process, and

b. using such knowledge in the development of demonstrations of improved devices and procedures in vocational rehabilitation.

4. More personnel trained in rehabilitation, particularly in the fields of rehabilitation medicine and nursing, physiatry, physical therapy, occupational therapy, counseling and social work. This will require more funds from public and private sources for undergraduate and graduate training, and for financial support to the training institutions required to produce the additional personnel needed.
5. More facilities and workshops, including rehabilitation centers, for providing rehabilitation services of all types to the disabled.
6. Encouragement of community organizations to widen public understanding and to attack and solve the problems of the disabled in the local community, particularly through creation or enlargement of community rehabilitation centers.
7. Extension of accident and disease prevention programs of all types.
8. Public education in general preventive medical care, including periodic health examinations.
9. Extension of educational efforts to increase employer acceptance of the handicapped.

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NOTE: All other information obtained through the Vocational Rehabilitation Administration, Department of Health, Education, and Welfare, Washington, D.C.

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WHAT ARE THE FACTS ABOUT TUBERCULOSIS?

TUBERCULOSIS

WHAT ARE THE FACTS ABOUT
TUBERCULOSIS
IN THE UNITED STATES TODAY?

This fact sheet has been compiled from
the best available information by the

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1966

WHAT ARE THE FACTS ABOUT TUBERCULOSIS IN THE UNITED STATES TODAY?

I. HOW MANY DEATHS ARE CAUSED BY TUBERCULOSIS EACH YEAR?

1. 7,920 Americans died from tuberculosis in 1965, out of an estimated total of 1,825,000 deaths for that year. (4)
2. Tuberculosis ranks 18th among leading causes of death in the U.S. today. (4)
3. In 1945, tuberculosis was the 7th leading cause of death. (4)
   In 1905, tuberculosis was the first leading cause of death.
4. The greatest number of deaths occurred in older age groups.
   About 68% of all tuberculosis deaths were among adults over 55. (4)
5. Almost 3 times as many men died from tuberculosis as did women in 1964. (4)

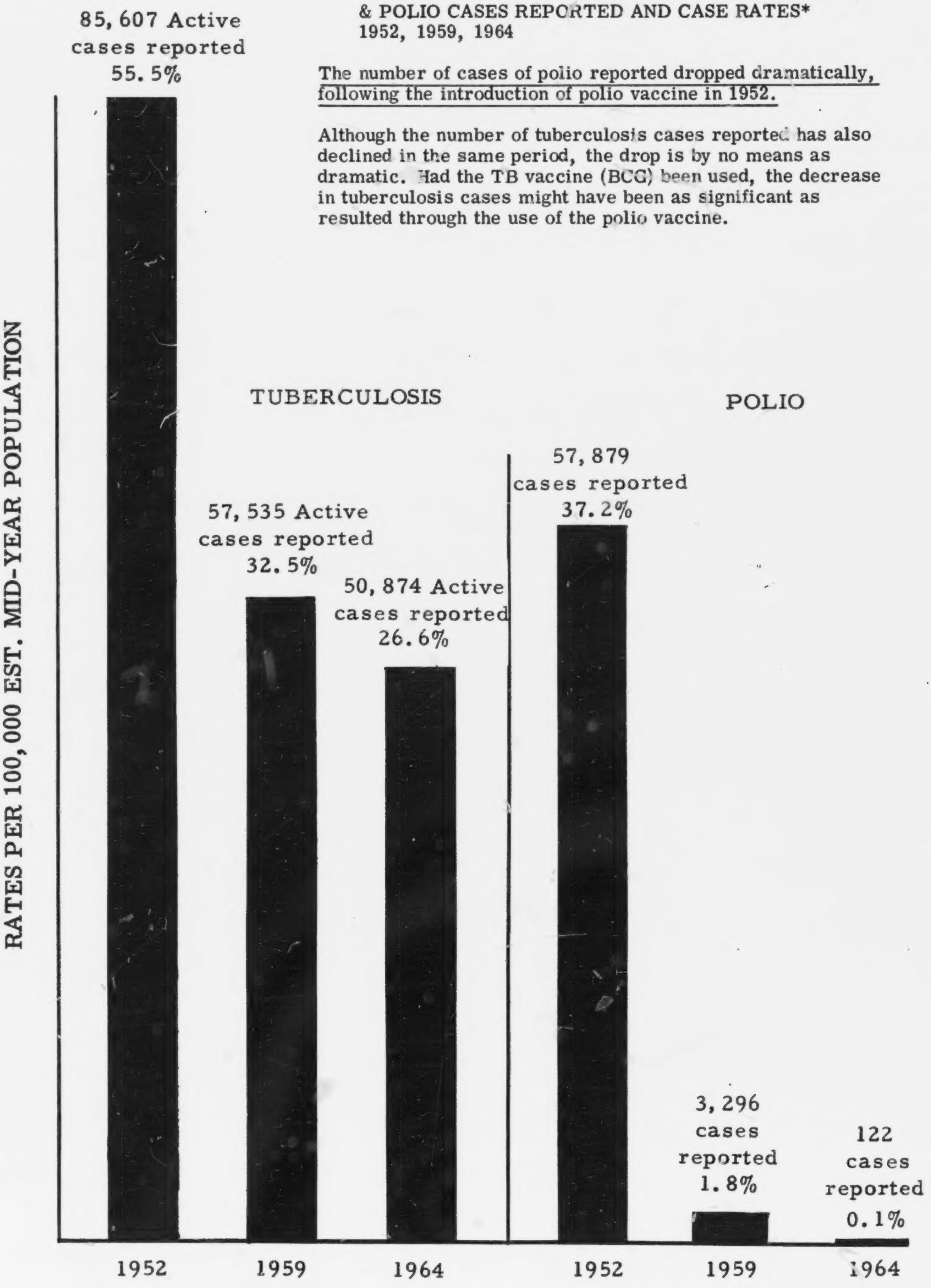
II. HOW HAS THE TUBERCULOSIS DEATH RATE DECLINED?

1. Between 1944 and 1965, the death rate from tuberculosis has declined 89.6%. (4)
   a. The effectiveness of streptomycin against tuberculosis was announced in 1945 and it became generally available in 1947.
2. Between 1952 and 1965 alone, tuberculosis deaths declined 74%. (4)
   a. The discovery of the usefulness of isoniazid was announced in 1952 and added dramatically to the declining drop in tuberculosis deaths.

COMPARISON OF NUMBER OF ACTIVE TUBERCULOSIS & POLIO CASES REPORTED AND CASE RATES*
1952, 1959, 1964

The number of cases of polio reported dropped dramatically, following the introduction of polio vaccine in 1952.

Although the number of tuberculosis cases reported has also declined in the same period, the drop is by no means as dramatic. Had the TB vaccine (BCG) been used, the decrease in tuberculosis cases might have been as significant as resulted through the use of the polio vaccine.

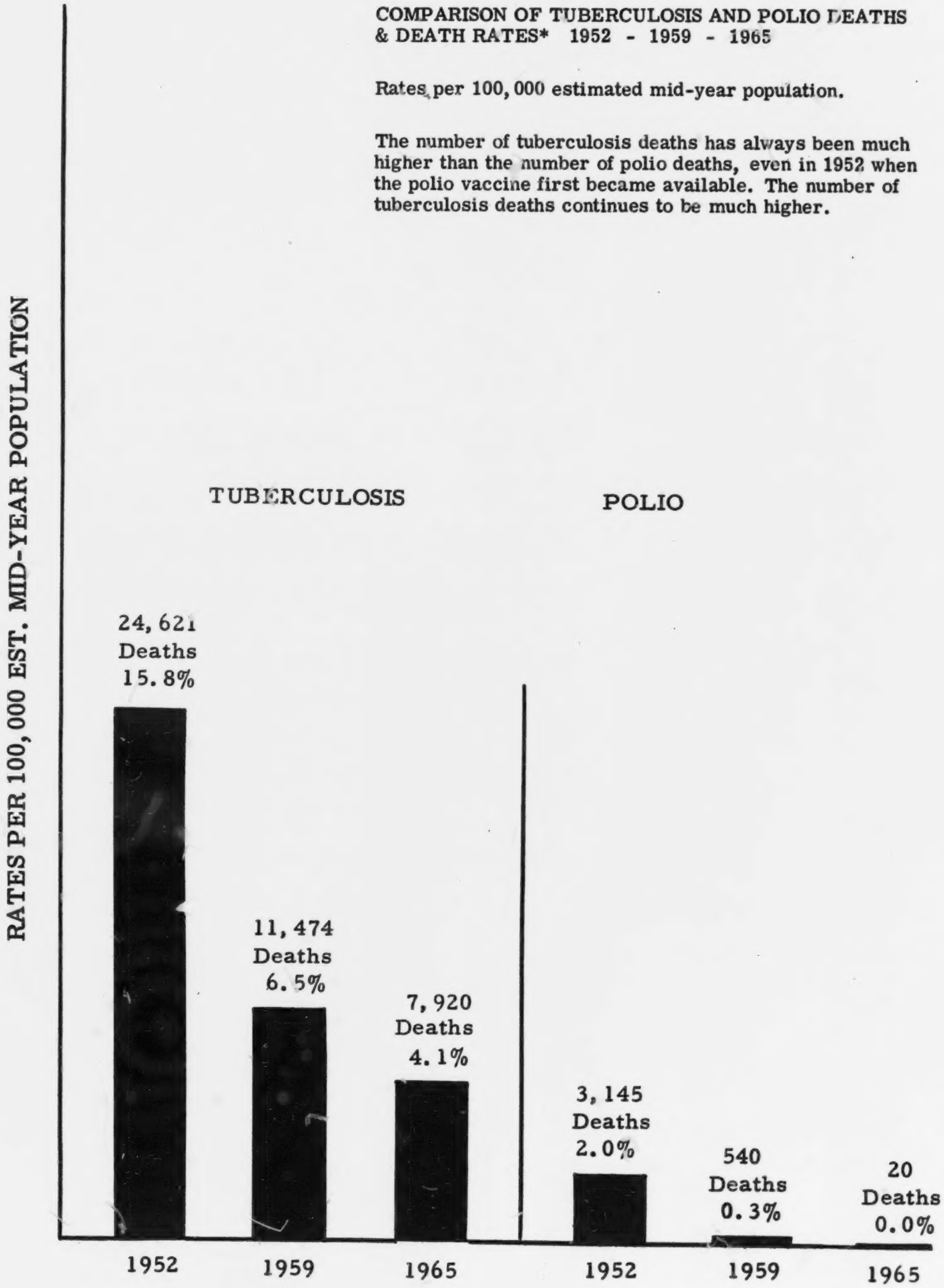


*(IN THE UNITED STATES)

COMPARISON OF TUBERCULOSIS AND POLIO DEATHS & DEATH RATES* 1952 - 1959 - 1965

Rates per 100,000 estimated mid-year population.

The number of tuberculosis deaths has always been much higher than the number of polio deaths, even in 1952 when the polio vaccine first became available. The number of tuberculosis deaths continues to be much higher.



***(IN THE UNITED STATES)**

III. HOW MANY NEW CASES OF TUBERCULOSIS ARE REPORTED EACH YEAR?

1. 50,874 new active cases of tuberculosis were reported in 1964, a 52% reduction from the 85,607 active cases reported in 1952, before isoniazid was generally used. (5)
2. There has been a slowing down of the decline in the new case rate.
   a. The goal of the U. S. Public Health Service and the National Tuberculosis Association is a new active case rate by 1970 of not more than 10 per 100,000 population. (1)
   b. The 1964 new case rate is 26.6. If this case rate is reduced 10% each year, it will be 1973 before the rate of 10 per 100,000 population is reached; however, since the average annual decline between 1960 and 1964 was less than 4%, it is reasonable to assume that this goal of 10 cases per 100,000 will not be reached for many, many years. (2)

IV. HOW MANY CASES OF TUBERCULOSIS ARE THERE IN THE UNITED STATES?

1. Since each state conducts a tuberculosis control program, data are available on the number of persons under active care or supervision. (4)
2. 320,000 persons (estimated) with active and inactive disease were on tuberculosis registers as of December 31, 1964. (4)
3. This is a decrease of 3% in the number of cases similarly recorded in 1960. (4)

	1956	1960	1964
Active	160,000	120,000	105,000
Other cases	240,000	210,000	215,000
	400,000	330,000	320,000 TB Victims

(Note: In February, 1952, the discovery of isoniazid against tuberculosis was announced and cases therefore dropped as sources of infection were stopped.)

V. HOW CAN TUBERCULOSIS BE ELIMINATED AS A PUBLIC HEALTH MENACE?

In the United States, in addition to the traditional methods of TB control of case finding, tuberculin testing, x-ray screening and chemotherapy, vaccination against tuberculosis must be added.

More and more health authorities in this country are now agreeing that BCG has a significant role to play in urban areas which have serious tuberculosis control problems.

Two groups of people are referred to in any discussion of the tuberculosis problem:

(1) Those who are infected with the tubercle bacillus, and are known as "positive reactors" to the tuberculin test. Once infected with the tubercle bacillus, such an individual remains at some small risk of developing clinical disease as long as he lives. The U.S. Public Health Service estimates that there are about 35 million people in the United States in this first group of "positive reactors." 75% of new cases of active tuberculosis come from this group.

However, if these cases had been protected from their primary TB infection, tuberculosis could by now be nearly eliminated as a public health problem.

(2) The second group consists of those who are not infected with the tubercle bacillus, and who are known as "negative reactors" to the tuberculin test. Everyone is born "TB negative."

The "TB negatives," can be protected by vaccination from becoming infected by the tubercle bacillus. The vaccine called BCG has been found to be 80% effective in the prevention of tuberculosis.

VI. HOW MANY OF THESE CASES OF TUBERCULOSIS ARE HOSPITALIZED?

Of the 105,000 active cases of tuberculosis on state registers, 42,000 or 40% were hospitalized. (4)

VII. HOW MANY SPECIAL TUBERCULOSIS HOSPITALS ARE THERE IN THE UNITED STATES?

1. There were 185 special tuberculosis hospitals in 1965 in the U.S. listed in the 1966 American Hospital Association Guide Issue. (12)

Of these:

178 were non-federal special TB hospitals

- 7 were federal special TB hospitals
  - 5 were operated by the Veterans Administration
  - 2 were operated by the U.S. Public Health Service.

2. The average daily census in the non-federal TB hospitals was 26,040; in the federal TB hospitals, 1,774. (12)

VIII. WHAT IS THE AVERAGE LENGTH OF STAY OF PATIENTS IN SPECIAL TUBERCULOSIS HOSPITALS IN THE U.S.?

In 1963, the average length of stay in these hospitals was 171.7 days, a 32% decline from the average stay of 253.1 days in 1945. (5)

IX. HOW MANY TUBERCULOSIS CLINICS ARE THERE IN THE U.S.?

In 1960 (latest available figures) there were 1,176 tuberculosis clinics in the U.S. (6) Most were operated by local and state health departments.

X. HOW MANY SPECIAL TUBERCULOSIS HOSPITALS ARE OPERATED BY THE VETERANS ADMINISTRATION?

1. At the end of June 1965, the Veterans Administration operated 4 tuberculosis hospitals.

   Since July 1958 the Veterans Administration had converted 13 tuberculosis hospitals to general hospitals and closed 3 others because of the control of the disease through the use of drugs.

2. The average number of operating beds for tuberculosis patients in VA hospitals was 6,282, about 5-1/4% of all operating beds in fiscal year 1965.

3. The average daily load of tuberculous patients in VA hospitals in 1965

was 5,330 – a 65% decline since 1954 when the peak average daily patient load of 15,221 tuberculous patients was reached. (7)

XI. HOW MUCH IS TUBERCULOSIS COSTING THE VETERANS ADMINISTRATION?

1. In fiscal 1965, hospital care costs plus compensation and pension benefits totaled an estimated $174.3 million (7)
   a. 15,180 tuberculous patients were discharged from VA hospitals during Calendar Year 1964. The average length of stay was 138 days. The average per diem cost in tuberculosis hospitals was $30.99 during fiscal year 1965. Thus, on the average, the hospitalization of these 15,180 patients cost the VA $64,919,091 in 1964.
   b. 75,307 veterans were receiving compensation payments for service-connected disabilities due to tuberculosis, totaling $7,268,039 per month, or $87.2 million for the year (fiscal 1965). (7)
   c. 20,349 veterans were receiving pensions for non-service connected disabilities due to tuberculosis amounting to $1,849,109 per month or $22.2 million for the year (fiscal 1965).

XII. HOW MUCH DOES TB HOSPITAL CARE COST?

1. In 1965 the expenses for special tuberculosis hospitals totaled $284 million. However, this is only a fraction of the total, as it does not include expenditures for tuberculosis patients hospitalized in other

special or in general hospitals, nor for those in hospitals operated by the Federal government. (12)

2. This is an average per patient day expenditure in 1965 of $29.27 in federal special TB hospitals and $17.39 in non-federal special TB hospitals. This represents a wide range since such costs vary considerably from place to place. (12)

In the tuberculosis units of the New York City Department of Hospitals, for instance, the average cost per patient day in 1964 was $34.12, but the range was from $28.23 to $54.35. (13)

XIII. HOW MUCH IS THE U.S. PUBLIC HEALTH SERVICE SPENDING FOR TUBERCULOSIS CONTROL PROGRAMS?

1. $15,661,000 was appropriated in fiscal 1966 as follows:
    a. Grants to States on a formula matching basis totaled $3,000,000. (8)
    b. Special projects grants to high incidence areas on a non-matching basis totaled $9,700,000. (8)
    c. Research, training and technical services totaled $2,961,000. (8)

XIV. HOW MUCH IS THE NATIONAL TUBERCULOSIS ASSOCIATION SPENDING FOR TUBERCULOSIS CONTROL EXCLUDING RESEARCH?

$17,651,143 was spent by the National Tuberculosis Association, and its affiliates, in 1964 on tuberculosis control activities: (17)

Professional education & training	$ 1,667,131
Community services	9,070,281
Public education & Information	5,923,205
Patient Services	990,526
	$17,651,143

XV. HOW MUCH IS BEING SPENT FOR RESEARCH AGAINST TUBERCULOSIS?

About $5,020,000 as follows:

1. The Tuberculosis Branch, Communicable Disease Center, U.S. Public Health Service, received appropriations for research in fiscal 1966 totaling $2,961,000. (8)
2. The Veterans Administration spent an estimated $650,000 in direct support of tuberculosis research in fiscal 1967. (7)
3. $1,409,000 was spent by the Nat'l Tuberculosis Association and its affiliates in 1964 for research and fellowships in the area of tuberculosis as well as other respiratory diseases. (17)
4. The National Institute of Allergy & Infectious Diseases is spending a total of $1,565,000 (fiscal 1967) for intramural and research grants in tuberculosis research.
5. Thus, we are spending only $5 million for research to find the answers to a disease that is conservatively estimated to cost the Nation $725 million annually in direct costs of care. (6)

XVI. HOW HAS MEDICAL RESEARCH PAID OFF AGAINST TUBERCULOSIS?

1. Decline in the death rate from tuberculosis

   Between 1944 and 1965, the tuberculosis death rate has declined 89.6% - due in major part to the medical research discovery of the effectiveness of streptomycin in 1945 and isoniazid in 1952. PAS is also sometimes used in combination with these drugs.

2. Decline in number of cases

   New active cases of tuberculosis reported declined 52% between 1952 (the year isoniazid was discovered) and 1964.

   The average daily load of tuberculous patients in Veterans Administration hospitals declined more than 65% between fiscal year 1954 and 1965.

3. Decline in TB bed occupancy

   Beds occupied by tuberculosis patients in all tuberculosis hospitals declined 55% between 1954 and 1963. (4)

   Between 1958 and 1965, the Veterans Administration has converted 13 tuberculosis hospitals to general hospitals and closed 3 others in order to keep pace with the changing medical requirements of veteran patients.

4. Preventive vaccine against tuberculosis

   As a result of medical research, BCG vaccine against tuberculosis was developed, which has helped to bring under control one of the world's greatest disease scourges, wherever BCG has been used.

The use of BCG vaccination has been in effect for more than 20 years in countries such as Japan, Norway, India, Sweden, Canada, Great Britain, and France, all of whom have found BCG vaccination about 80% effective in preventing tuberculosis.

XVII. HOW WIDELY USED IS BCG VACCINE IN OTHER COUNTRIES?

1. Up to December 31, 1964, more than 433 million people have been tuberculin-tested, and of these more than 169 million have been BCG vaccinated in the WHO-UNICEF BCG vaccination program, covering over 60 countries and territories. (14)
2. Studies by the Medical Research Council of Great Britain established definitely, as a result of 10-year trials that BCG is about 80% effective in the prevention of tuberculosis, and that this preventive benefit lasts, among the vaccinated, from 7-1/2 to 10 years, possibly longer. (15)

   In other words, people who are given BCG vaccination are 5 times safer from tuberculosis infection than those who have not been vaccinated.

XVIII. WHAT WAS THE CHICAGO, ILLINOIS, EXPERIENCE IN THE USE OF BCG VACCINE?

1. In 4 clinical studies conducted in Chicago it was found that the 3 most important elements in the control and elimination of tuberculosis are: (9)
   - a. Prevention of contact with open active TB cases;
   - b. Elimination of over-crowded housing; and
   - c. BCG vaccination

2. In another study of newly reported cases of active tuberculosis for the years 1963 and 1964 in the 25 highest tuberculosis rate communities of Chicago, there were two cases of active disease among 67,152 vaccinated persons. (Both cases had reverted to negative tuberculin reactors and refused re-vaccination.) The case rate for the BCG-vaccinated, ages 0 to 24 years, was 3 per 100,000 per two years. In the 734,028 nonvaccinated of the same group and in the same 25 areas, the new case rate was 62 per 100,000 per two years. (10)

XIX. WHAT IS THE TUBERCULOSIS PROBLEM IN NEW YORK CITY?

There were an estimated 600 tuberculosis deaths in New York City in 1965 – a rate of 7.5 per 100,000 population. (13)

This is 11% of all tuberculosis deaths in the nation for that year.

The national death rate from tuberculosis in 1962 was 5.1 per 100,000 – 46% lower than the TB death rate in New York City that year.

8% of all new cases of tuberculosis reported in the United States are recorded in New York City. Estimated 4,250 new cases were reported in New York City in 1965. (13)

XX. WHAT IS NEW YORK CITY DOING ABOUT BCG VACCINATION?

In September, 1963, Dr. George James, New York City Commissioner of Health, announced that the Health Department would expand its program of BCG vaccination. Dr. James noted that in the first 8 months of

1963, there was an increase of 380 cases or 12% over the same period in the previous year. He stated that this increase is significant in itself, "but what is especially alarming is that the steady rapid decline in TB cases since 1952, when the drug isoniazid was introduced, has been sharply reversed." (11)

Concerned about this increase, Dr. James, in addition to strengthening the traditional efforts of TB control – case-finding, x-ray and chemotherapy – inaugurated a BCG vaccination program, now operating for 7th Grade children in 45 Junior High and Elementary Parochial schools in the city's highest incidence areas. In this program, the Health Department has the cooperation and support of the New York City Board of Education. (11)

XXI. WHAT IS NEEDED TO EXPEDITE OUR CONTROL AND PREVENTION OF TUBERCULOSIS?

The new case rate is not going down, our present methods of control are not achieving the goal of a new case rate of only 10 cases per 100,000 as projected by the US-PHS and the NTA. In fact, the US-PHS estimate of 600,000 new cases of active TB in the United States between the years 1965 and 1980, will probably be realized and become an unnecessary burden to this country.

The Public Health Service and the voluntary agencies should actively sponsor all parts of the three-point program recommended by Dr. Johannes Holm, Executive Director of the International Union Against Tuberculosis, (16) if a realistic attack is to be made on the preventable disease of tuberculosis:

1. BCG to be given to school children below the age of 14 (among the tuberculin-negative group);
2. The finding and isolation of active cases of the disease;
3. Drug therapy for persons with active cases of tuberculosis

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Cover Photograph: Courtesy National Institutes of Health.
Photograph Page 14: Courtesy Department of Health, City of New York.

Vital Statistics Charts

MAIN ILLNESSES & HANDICAPPING CONDITIONS IN THE UNITED STATES (estimated)

1.	Mental disorders (in some degree)	19,000,000	(1)
2.	Arthritis and rheumatic diseases	13,000,000	(2)
3.	Diseases of the heart and circulation (including cerebrovascular diseases)	16,421,000	(3)
4.	Hearing impairments	6,231,000	(5)
5.	Mentally retarded	5,500,000	(6)
6.	Alcoholics.	5,000,000	(7)
8.	Diabetes mellitus	1,500,000	(9)
9.	Epilepsy	1,800,000	(8)
10.	Parkinson's Disease	500,000	(8)
11.	Cancer - under treatment now	870,000	(10)
12.	Cerebral palsy	550,000	(11)
13.	Multiple sclerosis & other demyelinating diseases	500,000	(12)
14.	Visual Impairments (legally blind - 411,000).	3,500,000	(13) & (5)
15.	Tuberculosis (active known & unknown cases)	250,000	(14)
16.	Muscular dystrophy	200,000	(15)
17.	Syphilis (cases reported in 1963 to USPHS).	124,137	(4)

During the period July 1964-June 1965 an estimated incidence of 400.9 million acute illnesses and injuries requiring either medical attention or restriction of daily activity occurred among the civilian, noninstitutional population of the United States. This estimate represents an average of about 212.7 conditions per 100 persons per year. (16)

Acute illness and injury caused each person in the population an average of 8.3 days of restricted activity during the year, including about 3.5 days spent in bed; 3.4 days were lost from work per currently employed person by acute illness or injury. (16)

An estimated 87.3 million persons, or 46.3% of the population (exclusive of the Armed Forces and inmates of institutions) reported one or more chronic diseases or impairments during this same period; and an estimated 54.2 million persons, or a rate of 28.8 per 100 persons, were injured during the period. (16)

MAIN ILLNESSES AND HANDICAPPING CONDITIONS IN THE UNITED STATES - cont.

Sources:

(1) "A Survey of Mental Disease in an Urban Population" - a Baltimore survey by Commission on Chronic Illness. Reported October 1956 to the American Public Health Association.

(2) The Arthritis Foundation, New York.

(3) "Heart Disease in Adults, United States, 1960-62. Series 11, No. 6, Nat'l Center for Health Statistics, U.S. Public Health Service, Washington, D.C., September 1964. Estimates on cerebrovascular disorders from Nat'l Institute of Neurological Diseases and Blindness, Bethesda, Maryland.

(4) Statistical Abstract of the United States, 1965.

(5) Health Statistics from the U.S. National Health Survey. Series B-35: Impairments, United States July 1959-June 1961. Published by the U.S. Dept. of Health, Education, and Welfare, Washington, D.C.

(6) National Association for Retarded Children, Inc., New York.

(7) "A Plan for a Center on Alcoholism and Drug Abuse", October 1965. National Institute of Mental Health, Bethesda, Maryland.

(8) National Institute of Neurological Diseases and Blindness, Bethesda, Md.

(9) Health Statistics from the U.S. National Health Survey, Series B-21: Diabetes, United States, July 1957-June 1959. Published by the U.S. Dept. of Health, Education, and Welfare, Washington, D.C.

(10) 1965 Cancer Facts and Figures, American Cancer Society, Inc., New York.

(11) United Cerebral Palsy, New York.

(12) National Multiple Sclerosis Society, Inc., New York.

(13) National Society for the Prevention of Blindness, New York.

(14) National Tuberculosis Association, New York.

(15) Muscular Dystrophy Association of America, Inc., New York.

(16) Current Estimates from the Health Interview Survey, United States. July 1964-June 1965. Series 10, No. 25, National Center for Health Statistics, U.S. Public Health Service, Washington, D.C.

	1965 (est.)		1964 (est.)		1963		1962	
	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)
TOTAL DEATHS (A) and DEATH RATES (B-1) (listed in 1951 numerical order)	1,825,000	9.4 (B-2)	1,801,000	9.4	1,813,549	9.6	1,756,720	9.5
1. Major cardiovascular-renal diseases	999,850	515.9	989,380	517.1	994,747	527.6	968,809	521.4
a. Heart & Circulation diseases	989,130	510.3	978,260	511.3	983,504	521.7	957,437	515.2
(Heart diseases	709,010	365,8	702,230	367.0	707,830	375.4	688,009	370.3
(Vascular lesions	203,330	104.9	200,640	104.9	201,166	106.7	197,451	106.3
(Acute rheumatic fever			---	---	---	---	---	---
(Hypertension without mention of heart & general arteriosclerosis	49,670	25.6	49,460	25.8	50,123	26.6	49,345	26.5
(Other circulatory diseases	27,120	14.0	25,930	13.6	24,385	12.9	22,632	12.2
b. Chronic & unspecified nephritis & other renal sclerosis	10,720	5.5	11,120	5.8	11,243	6.0	11,372	6.1
2. Cancer & other malignant tumors	296,320	152.9	290,030	151.6	285,362	151.4	278,562	149.4
(Digestive	94,460	48.7	92,930	48.6	92,914	49.3	92,047	49.5
(Genital	41,000	21.2	40,120	21.0	39,983	21.2	39,590	21.3
(Respiratory	51,580	26.6	48,420	25.3	46,973	24.9	44,644	24.0
(Breast	26,770	13.8	26,670	13.9	25,401	13.5	24,958	13.4
(Other	82,510	42.6	81,890	42.8	80,091	42.4	77,323	41.6
3. Deaths associated with childbirth	---	---	---	---	---	---	---	---
(Neonatal - 1st mo. * of life	---	---	70,632	17.5	74,648	18.2	77,460	18.3
Fetal deaths **	##	##	##	##	##	##	##	##
(Maternal deaths ***	1,150	0.6	1,370	0.7	1,466	0.8	1,465	0.8
4. Accidental causes	106,900	55.2	103,520	54.1	100,669	53.4	97,139	52.3
5. Diseases of early infancy (birth injuries, postnatal asphyxia, atelectasis, etc.)	55,060	28.4	59,460	31.1	62,688	33.3	64,205	34.6
6. Pneumonia, except newborn	59,310	30.6	58,040	30.3	63,678	33.8	56,564	30.4
7. Tuberculosis, all types	7,920	4.1	8,100	4.2	9,311	4.9	9,506	5.1
8. Nephritis and other renal scleroses (kidney diseases) 1/	---	---	---	---	---	---	---	---
9. Diabetes	33,170	17.1	32,060	16.8	32,465	17.2	31,222	16.8
10. Senility, ill-defined, unknown	23,960	12.4	23,860	12.5	22,420	11.9	19,730	10.6
11. Congenital malformations	19,730	10.2	20,610	10.8	20,817	11.0	21,192	11.4
12. Suicide	22,560	11.6	20,510	10.7	20,825	11.0	20,207	10.9
13. Cirrhosis of the liver	24,240	12.5	23,570	12.3	22,456	11.9	21,824	11.7
14. Hernia, intestinal obstruction	9,720	5.0	9,760	5.1	9,917	5.3	9,723	5.2
15. Ulcer of stomach & duodenum	10,560	5.4	10,830	5.7	12,161	6.5	12,228	6.6
16. Gastritis, duodenitis, colitis, enteritis, etc.	7,640	3.9	7,750	4.1	8,246	4.4	8,194	4.4
17. Homicide	10,340	5.3	9,580	5.0	9,225	4.9	9,013	4.9
18. Influenza	2,150	1.1	1,660	0.9	7,083	3.8	3,431	1.8
19. Asthma	4,320	2.2	4,630	2.4	5,058	2.7	4,896	2.6
20. Hyperplasia of prostate	3,240	1.7	3,560	1.9	4,248	2.3	4,283	2.3
21. Syphilis	2,520	1.3	2,700	1.4	2,666	1.4	2,811	1.5
22. Cholelithiasis, all kinds (gallstones)	4,850	2.5	4,790	2.5	4,676	2.5	4,831	2.6
23. Non-malignant tumors	5,070	2.6	5,090	2.7	4,905	2.6	4,681	2.5
24. All other infective & parasitic diseases	5,680	2.9	6,500	3.4	3,362	1.8	6,342	3.4
25. Anemias	3,460	1.8	3,590	1.9	3,409	1.8	3,398	1.8
26. Acute nephritis & nephritis with edema including nephrosis 1/	1,420	0.7	1,280	0.7	1,434	0.8	1,573	0.8
27. Infections of kidney	9,550	4.9	10,100	5.3	8,952	4.7	8,744	4.7
28. Appendicitis	1,870	1.0	1,810	0.9	1,749	0.9	1,800	1.0
29. Bronchitis	5,870	3.0	5,550	2.9	5,462	2.9	4,665	2.5
30. Other diseases of central nervous system (incl. inflammatory dis.)	##	##	##	##	2,513	1.3	2,479	1.3
31. Epilepsy	##	##	##	##	1,975	1.0	2,048	1.1
32. Alcoholism	##	##	##	##	2,432	1.3	2,311	1.2
33. Parkinson's Disease	##	##	##	##	2,944	1.6	2,816	1.5
34. Other diseases of intestines & peritoneum	##	##	##	##	4,490	2.4	4,143	2.4
35. Avitaminoses & other metabolic diseases	##	##	##	##	3,893	2.1	3,733	2.0
36. Bronchiectasis (& other broncho pulmonic diseases, 1964 & 1965	26,800	13.8	23,490	12.3	2,125	1.1	2,105	1.1

(est.)		1964 (est.)		1963		1962		1961		1960		1959		
)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)
000	9.4 (B-2)	1,801,000	9.4	1,813,549	9.6	1,756,720	9.5	1,701,522	9.3 (B-2)	1,711,982	9.5 (B-2)	1,656,814	9.4 (B-2)	1,647,8
850	515.9	989,380	517.1	994,747	527.6	968,809	521.4	936,218	511.7	935,668	521.8	910,635	516.2	907,3
130	510.3	978,260	511.3	983,504	521.7	957,437	515.2	924,014	505.4	923,635	515.1	898,336	509.2	893,4
010	365,8	702,230	367.0	707,830	375.4	688,009	370.3	663,391	362.6	660,978	368.6	641,044	363.4	637,
330	104.9	200,640	104.9	201,166	106.7	197,451	106.3	192,951	105.5	193,588	108.0	191,376	108.5	190,
		---	---	---	---	---	---	608	0.3	734	0.4	---	---	8
,670	25.6	49,460	25.8	50,123	26.6	49,345	26.5	47,573	25.9	48,538	27.3	47,741	27.0	48,2
120	14.0	25,930	13.6	24,385	12.9	22,632	12.2	20,707	11.3	19,797	11.0	18,175	10.3	17,2
,720	5.5	11,120	5.8	11,243	6.0	11,372	6.1	11,596	6.3	12,033	6.7	12,299	7.0	13,8
320	152.9	290,030	151.6	285,362	151.4	278,562	149.4	273,502	149.5	267,627	149.2	260,047	147.4	254,4
460	48.7	92,930	48.6	92,914	49.3	92,047	49.5	91,727	50.1	91,977	51.3	89,490	50.7	88,1
,000	21.2	40,120	21.0	39,983	21.2	39,590	21.3	39,256	21.5	38,669	21.6	38,109	21.6	38,3
,580	26.6	48,420	25.3	46,973	24.9	44,644	24.0	42,211	23.1	40,661	22.7	37,413	21.2	35,4
,770	13.8	26,670	13.9	25,401	13.5	24,958	13.4	24,542	13.4	23,970	13.4	23,085	13.1	22,6
510	42.6	81,890	42.8	80,091	42.4	77,323	41.6	75,766	41.4	72,350	40.3	71,950	40.6	69,7
---	---	---	---	---	---	---	---	177,930	---	174,931	---	174,984	---	175,2
---	---	70,632	17.5	74,648	18.2	77,460	18.3	79,350	18.4	78,900	18.7	80,830	19.0	81,7
#	##	##	##	##	##	##	##	97,007	22.7	94,452	22.2	92,566	21.8	92,8
,150	0.6	1,370	0.7	1,466	0.8	1,465	0.8	1,573	0.9	1,579	0.9	1,588	0.9	1,5
,900	55.2	103,520	54.1	100,669	53.4	97,139	52.3	92,249	50.4	93,872	52.3	92,080	52.2	90,6
,060	28.4	59,460	31.1	62,688	33.3	64,205	34.6	65,679	35.9	67,094	37.4	67,934	38.5	68,9
,310	30.6	58,040	30.3	63,678	33.8	56,564	30.4	53,038	29.0	58,931	32.9	52,194	29.6	52,9
,920	4.1	8,100	4.2	9,311	4.9	9,506	5.1	9,938	5.4	10,866	6.1	11,456	6.5	12,3
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170	17.1	32,060	16.8	32,465	17.2	31,222	16.8	30,098	16.5	29,971	16.7	28,080	15.9	27,5
960	12.4	23,860	12.5	22,420	11.9	19,730	10.6	19,094	10.4	20,385	11.4	19,066	10.8	19,7
,730	10.2	20,610	10.8	20,817	11.0	21,192	11.4	21,922	12.0	21,860	12.2	21,780	12.3	21,4
560	11.6	20,510	10.7	20,825	11.0	20,207	10.9	18,999	10.4	19,031	10.6	18,633	10.6	18,5
240	12.5	23,570	12.3	22,456	11.9	21,824	11.7	20,737	11.3	20,296	11.3	19,242	10.9	18,6
720	5.0	9,760	5.1	9,917	5.3	9,723	5.2	9,177	5.0	9,081	5.1	9,106	5.2	8,8
,560	5.4	10,830	5.7	12,161	6.5	12,228	6.6	11,540	6.3	11,360	6.3	10,674	6.1	10,8
,640	3.9	7,750	4.1	8,246	4.4	8,194	4.4	7,820	4.3	7,932	4.4	7,758	4.4	7,8
,340	5.3	9,580	5.0	9,225	4.9	9,013	4.9	8,578	4.7	8,446	4.7	8,159	4.6	7,8
,150	1.1	1,660	0.9	7,083	3.8	3,431	1.8	2,137	1.2	7,872	4.4	2,845	1.6	4,4
,320	2.2	4,630	2.4	5,058	2.7	4,896	2.6	4,910	2.7	5,394	3.0	4,984	2.8	5,0
,240	1.7	3,560	1.9	4,248	2.3	4,283	2.3	4,158	2.3	4,449	2.5	4,583	2.6	4,6
520	1.3	2,700	1.4	2,666	1.4	2,811	1.5	2,850	1.6	2,945	1.6	3,069	1.7	3,4
,850	2.5	4,790	2.5	4,676	2.5	4,831	2.6	4,707	2.6	4,619	2.6	4,497	2.5	4,7
,070	2.6	5,090	2.7	4,905	2.6	4,681	2.5	4,751	2.6	4,893	2.7	4,949	2.8	4,9
,680	2.9	6,500	3.4	3,362	1.8	6,342	3.4	3,376	1.9	3,371	1.9	3,817	2.2	3,8
460	1.8	3,590	1.9	3,409	1.8	3,398	1.8	3,280	1.8	3,330	1.9	3,244	1.8	3,1
,420	0.7	1,280	0.7	1,434	0.8	1,573	0.8	1,584	0.9	1,651	0.9	1,821	1.0	2,2
,550	4.9	10,100	5.3	8,952	4.7	8,744	4.7	8,095	4.4	7,645	4.3	6,822	3.9	6,8
,870	1.0	1,810	0.9	1,749	0.9	1,800	1.0	1,819	1.0	1,871	1.0	1,837	1.0	1,8
,870	3.0	5,550	2.9	5,462	2.9	4,665	2.5	4,064	2.2	4,343	2.4	3,840	2.2	3,9
#	##	##	##	2,513	1.3	2,479	1.3	2,189	1.2	2,236	1.2	2,199	1.2	2,1
#	##	##	##	1,975	1.0	2,048	1.1	1,898	1.0	1,989	1.1	2,069	1.2	2,0
#	##	##	##	2,432	1.3	2,311	1.2	2,247	1.2	2,235	1.2	2,144	1.2	2,5
#	##	##	##	2,944	1.6	2,816	1.5	2,851	1.6	2,898	1.6	2,924	1.7	2,7
#	##	##	##	4,490	2.4	4,143	2.4	3,902	2.1	3,703	2.1	3,507	2.0	3,4
#	##	##	##	3,893	2.1	3,733	2.0	3,871	2.1	3,857	2.2	3,431	1.9	2,2
,800	13.8	23,490	12.3	2,125	1.1	2,105	1.1	2,193	1.2	2,408	1.3	2,263	1.3	2,4

960	1959		1958		1957		1956		1955		1954		19
(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)
9.5	1,656,814	9.4	1,647,886	9.5	1,633,128	9.5	1,564,476	9.4	1,528,717	9.3	1,481,091	9.2	1,517,541
(B-2)		(B-2)		(B-2)		(B-2)		(B-2)		(B-2)		(B-2)	
521.8	910,635	516.2	907,316	523.8	891,825	523.7	854,152	510.7	831,353	506.0	798,091	495.1	814,662
515.1	898,336	509.2	893,489	515.8	876,793	514.9	838,848	501.5	815,532	496.4	781,081	484.6	795,888
368.6	641,044	363.4	637,246	367.9	628,504	369.1	602,995	360.5	584,620	355.8	560,077	347.5	570,275
108.0	191,376	108.5	190,758	110.1	187,709	110.2	177,845	106.3	174,142	106.0	167,777	104.1	169,800
0.4	---	---	806	0.5	900	0.5	1,033	0.6	1,131	0.7	1,297	0.8	1,523
27.3	47,741	27.0	48,281	27.9	44,400	26.1	42,966	25.6	43,648	26.6	41,608	25.9	44,738
11.0	18,175	10.3	17,204	9.9	15,280	9.0	14,009	8.4	11,991	8.9	10,259	6.4	9,552
6.7	12,299	7.0	13,827	8.0	15,032	8.8	15,304	9.1	15,821	9.6	17,073	10.6	18,774
149.2	260,047	147.4	254,426	146.9	253,183	148.7	247,357	147.9	240,681	146.5	234,669	145.6	229,079
51.3	89,490	50.7	88,144	50.9	88,096	51.7	87,740	52.5	85,872	52.3	85,493	53.0	84,444
21.6	38,109	21.6	38,390	22.2	38,472	22.6	37,741	22.6	37,509	22.8	36,947	22.9	36,241
22.7	37,413	21.2	35,423	20.4	33,895	19.9	32,197	19.2	29,914	18.2	27,627	17.1	26,388
13.4	23,085	13.1	22,675	13.1	22,720	13.3	22,261	13.3	21,945	13.4	20,909	13.0	20,566
40.3	71,950	40.6	69,794	40.3	70,000	41.1	67,418	40.2	65,441	39.9	63,693	39.5	61,440
---	174,984	---	175,252	---	175,515	---	172,643	103.2	171,159	104.2	170,973	106.1	165,030
18.7	80,830	19.0	81,798	19.5	81,088	19.1	78,659	18.9	77,351	19.1	76,724	19.1	76,332
22.2	92,566	21.8	92,873	22.1	92,681	21.8	92,282	22.2	91,907	22.7	92,144	22.9	86,313
0.9	1,588	0.9	1,561	0.9	1,746	1.0	1,702	1.0	1,901	1.2	2,105	1.3	2,385
52.3	92,080	52.2	90,604	52.3	95,307	56.0	94,780	56.7	93,443	56.9	90,032	55.9	95,032
37.4	67,934	38.5	68,960	39.8	66,569	39.1	64,546	38.6	64,043	39.0	63,486	39.4	63,444
32.9	52,194	29.6	52,997	30.6	53,538	31.4	44,780	26.8	41,755	25.4	38,311	23.8	42,778
6.1	11,456	6.5	12,361	7.1	13,324	7.8	14,061	8.4	14,940	9.1	16,392	10.2	19,544
16.7	28,080	15.9	27,501	15.9	27,180	16.0	26,184	15.7	25,466	15.5	25,151	15.6	25,796
11.4	19,066	10.8	19,729	11.4	19,164	11.3	18,912	11.3	19,914	12.1	20,209	12.5	21,693
12.2	21,780	12.3	21,411	12.4	21,818	12.8	21,065	12.6	20,502	12.5	20,081	12.5	20,012
10.6	18,633	10.6	18,519	10.7	16,632	9.8	16,727	10.0	16,760	10.2	16,356	10.1	15,947
11.3	19,242	10.9	18,638	10.8	19,317	11.3	17,924	10.7	16,763	10.2	16,201	10.1	16,399
5.1	9,106	5.2	8,853	5.1	8,571	5.0	8,453	5.1	8,654	5.3	8,498	5.3	8,727
6.3	10,674	6.1	10,801	6.2	10,365	6.1	10,028	6.0	9,730	5.9	9,391	5.8	9,240
4.4	7,758	4.4	7,838	4.5	7,971	4.7	7,508	4.5	7,754	4.7	7,892	4.9	8,510
4.7	8,159	4.6	7,815	4.5	7,641	4.5	7,629	4.6	7,418	4.5	7,735	4.8	7,640
4.4	2,845	1.6	4,442	2.6	7,643	4.4	2,323	1.4	2,755	1.7	2,680	1.7	9,460
3.0	4,984	2.8	5,035	2.9	6,667	3.9	5,965	3.6	5,960	3.6	6,136	3.8	6,737
2.5	4,583	2.6	4,627	2.7	5,097	3.0	5,368	3.2	6,062	3.7	6,095	3.8	6,173
1.6	3,069	1.7	3,469	2.0	3,825	2.2	3,870	2.3	3,834	2.3	4,835	3.0	5,273
2.6	4,497	2.5	4,720	2.7	4,944	2.9	5,262	3.1	5,939	3.6	5,690	3.5	5,602
2.7	4,949	2.8	4,961	2.9	5,068	3.0	4,887	2.9	5,168	3.1	5,094	3.2	5,263
1.9	3,817	2.2	3,812	2.2	5,478	3.2	3,453	2.1	3,169	2.0	3,483	2.1	3,635
1.9	3,244	1.8	3,195	1.8	2,987	1.8	3,143	1.9	3,107	1.9	3,301	2.0	3,580
0.9	1,821	1.0	2,203	1.3	2,275	1.3	2,377	1.4	2,393	1.5	2,515	1.6	2,789
4.3	6,822	3.9	6,889	4.0	6,346	3.7	5,767	3.4	4,911	3.0	4,300	2.7	4,052
1.0	1,837	1.0	1,845	1.1	1,982	1.1	2,103	1.3	2,273	1.4	2,278	1.4	2,398
2.4	3,840	2.2	3,973	2.3	3,581	2.1	3,192	1.9	3,057	1.9	2,872	1.8	3,073
1.2	2,199	1.2	2,177	1.3	2,114	1.2	2,211	1.3	2,242	1.4	2,118	1.3	2,067
1.1	2,069	1.2	2,062	1.2	2,166	1.3	2,098	1.3	2,143	1.3	2,136	1.3	2,177
1.2	2,144	1.2	2,501	1.4	2,256	1.3	2,066	1.2	1,941	1.2	2,039	1.3	2,222
1.6	2,924	1.7	2,733	1.6	2,592	1.5	2,490	1.5	2,565	1.6	2,330	1.4	2,489
2.1	3,507	2.0	3,413	1.9	2,690	1.6	2,991	1.7	2,638	1.6	2,528	1.5	2,414
2.2	3,431	1.9	2,270	1.3	1,314	0.8	1,252	0.7	1,248	0.8	1,240	0.8	1,213
1.3	2,263	1.3	2,414	1.4	2,273	1.3	2,095	1.3	2,133	1.3	2,147	1.3	2,309

955	1954		1953		1952		1951		1950		1949		194
(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)
9.3 (B-2)	1,481,091	9.2 (B-2)	1,517,541	9.59 (B-2)	1,496,838	9.61 (B-2)	1,482,099	9.66 (B-2)	1,452,454	9.63 (B-2)	1,443,607	9.7 (B-2)	1,444,337
506.0	798,091	495.1	814,662	514.6	796,871	511.6	786,799	513.0					
496.4	781,081	484.6	795,888	502.7	776,114	498.3	764,281	498.3	745,074	494.4	720,499	485.0	712,681
355.8	560,077	347.5	570,275	360.2	555,141	356.4	545,675	355.8	535,705	355.5	518,568	349.1	512,282
106.0	167,777	104.1	169,800	107.3	166,331	106.8	163,550	106.6	156,751	104.0	149,953	100.9	148,603
0.7	1,297	0.8	1,523	1.0	1,583	1.0	1,648	1.1	1,924	1.3	2,304	1.6	2,472
26.6	41,608	25.9	44,738	28.2	44,191	28.3	45,140	29.2	43,297	28.7	42,625	28.7	41,977
8.9	10,259	6.4	9,552	6.0	8,868	5.7	8,268	5.4	7,397	4.9	7,049	4.7	7,347
9.6	17,073	10.6	18,774	11.9	20,757	13.3	22,518	14.7					
146.5	234,669	145.6	229,079	144.7	223,277	143.3	215,525	140.5	210,733	139.8	206,325	138.9	198,949
52.3	85,493	53.0	84,444	53.3	83,238	53.4	81,807	53.3	82,263	55.4	82,281	55.4	81,069
22.8	36,947	22.9	36,241	22.9	35,379	22.7	34,491	22.5	44,786	29.7	34,545	23.3	33,360
18.2	27,627	17.1	26,388	16.7	24,330	15.6	22,513	14.7	21,503	14.3	19,518	13.1	17,984
13.4	20,909	13.0	20,566	13.0	19,892	12.8	19,179	12.5	18,973	12.6	18,553	12.5	17,941
39.9	63,693	39.5	61,440	39.8	60,438	39.2	57,535	37.5	43,208	27.8	51,428	34.6	48,595
104.2	170,973	106.1	165,030	104.3	164,411	105.5	162,700	106.1	157,115	103.9	161,031	107.9	165,204
19.1	76,724	19.1	76,332	19.1	76,252	19.8	75,192	20.0	72,855	20.5	76,326	21.4	78,426
22.7	92,144	22.9	86,313	22.1	85,549	22.2	84,696	22.6	81,300	22.9	81,489	22.9	83,021
1.2	2,105	1.3	2,385	1.5	2,610	1.7	2,812	1.8	2,960	2.0	3,216	2.2	3,757
56.9	90,032	55.9	95,032	60.0	96,172	61.7	95,871	62.5	91,303	60.6	90,106	60.7	92,878
39.0	63,486	39.4	63,444	40.1	63,659	40.9	63,096	41.1	60,989	41.2	64,179	43.2	64,897
25.4	38,311	23.8	42,778	27.0	40,634	26.1	41,223	26.9	40,523	26.9	40,038	27.0	43,602
9.1	16,392	10.2	19,544	12.3	24,621	15.8	30,863	20.1	33,959	22.5	39,100	26.3	42,041
									28,147	18.7	29,532	19.9	30,445
15.5	25,151	15.6	25,796	16.3	25,474	16.4	25,047	16.3	24,419	16.2	25,089	16.9	21,988
12.1	20,209	12.5	21,693	13.7	21,950	14.1	22,647	14.8	22,517	14.9	23,520	15.8	27,132
12.5	20,081	12.5	20,012	12,6	19,768	12.7	18,865	12.3	18,425	12.2	18,864	12.7	18,768
10.2	16,356	10.1	15,947	10.1	15,567	10.0	15,909	10.4	17,143	11.4	16,993	11.4	16,389
10.2	16,201	10.1	16,399	10.4	15,934	10.2	15,075	9.8	13,855	9.2	13,694	9.2	13,495
5.3	8,498	5.3	8,727	5.5	8,481	5.4	8,627	5.6	8,894	5.8	9,854	6.6	10,729
5.9	9,391	5.8	9,240	5.8	8,770	5.6	8,487	5.5	8,214	5.5	7,809	5.3	7,444
4.7	7,892	4.9	8,510	5.4	8,743	5.6	8,036	5.2	7,622	5.1	9,970	6.7	8,944
4.5	7,735	4.8	7,640	4.8	8,054	5.2	7,495	4.9	7,930	5.3	8,033	5.4	8,666
1.7	2,680	1.7	9,460	6.0	5,631	3.6	6,946	4.5	6,597	4.4	4,602	3.1	6,349
3.6	6,136	3.8	6,737	4.3	6,943	4.5	6,871	4.5	4,322	2.9	4,547	3.1	****
3.7	6,095	3.8	6,173	3.9	6,286	4.0	6,417	4.2	6,359	4.2	6,860	4.6	6,907
2.3	4,835	3.0	5,273	3.3	5.719	3.7	6,274	4.1	7,568	5.0	8,581	5.8	8,652
3.6	5,690	3.5	5,602	3.8	5,903	3.7	5,724	3.7	5,870	3.9	6,292	4.2	****
3.1	5,094	3.2	5,263	3.3	5,133	3.3	5,166	3.4	5,374	3.6	5,861	3.9	5,580
2.0	3,483	2.1	3,635	2.3	4,129	2.6	4,069	2.7	3,158	2.1	3,930	2.6	4,167
1.9	3,301	2.0	3,580	2.3	3,987	2.6	4,018	2.6	4,916	3.3	4,446	3.0	4,170
1.5	2,515	1.6	2,789	1.8	3,131	2.0	3,264	2.1					
3.0	4,300	2.7	4,052	2.6	3,691	2.4	3,261	2.1	3,129	2.1	3,128	2.1	****
1.4	2,278	1.4	2,398	1.5	2,710	1.7	2,846	1.9	3,080	2.0	3,744	2.5	3,828
1.9	2,872	1.8	3,073	1.9	2,970	1.9	2,626	1.7	2,742	1.8	3,284	2.2	3,227
1.4	2,118	1.3	2,067	1.3	2,085	1.3	2,085	1.6	2,494	1.6	2,217	1.5	****
1.3	2,136	1.3	2,177	1.4	2,325	1.5	2,332	1.5	2,206	1.5	2,397	1.6	****
1.2	2,039	1.3	2,222	1.4	2,265	1.5	2,322	1.5	2,267	1.5	2,466	1.7	****
1.6	2,330	1.4	2,489	1.6	2,396	1.5	2,243	1.5	1,934	1.3	2,179	1.5	****
1.6	2,528	1.5	2,414	1.6	2,312	1.5	2,241	1.4	2,144	1.4	2,162	1.5	****
0.8	1,240	0.8	1,213	0.8	1,289	0.8	2,202	1.4	1,383	0.9	1,558	1.0	****
1.3	2,147	1.3	2,309	1.5	2,168	1.4	2,190	1.4	2,127	1.4	2,187	1.5	****

1948		1947		1946		1945		
	(B-1)	(A)	(B-1)	(A)	(B-1)	(A)	(B-1)	
337	9.9 (B-2)	1,445,370	10.1 (B-1)	1,395,617	10.0 (B-2)	1,401,719	10.6 (B-2)	**TOTAL DEATHS (A) and DEATH RATES (B-1)** **(listed in 1951 numerical order)**
								1. Major cardiovascular-renal diseases
681	488.0	699,966	488.2	658,140	470.5	658,165	498.1	a. Heart & Circulation diseases
282	350.8	500,240	348.9	465,943	333.1	460,340	348.4	(Heart diseases
603	101.8	148,606	103,6	142,490	101.9	146,457	110.8	(Vascular lesions
472	1.7	2,731	1.9	2,981	2.1	3,576	2.7	(Acute rheumatic fever
977	28.8	41,456	28.9	40,444	28.9	41,894	31.7	(Hypertension without mention of heart & general arteriosclerosis
347	5.0	6,933	4.8	6,282	4.5	5,898	4.5	(Other circulatory diseases
								b. Chronic & unspecified nephritis & other renal sclerosis
949	136.2	191,495	133.6	183,493	131.2	178,713	135.2	2. Cancer & other malignant tumors
069	55.5	79,225	55.3	77,076	55.1	76,445	57.9	(Digestive
360	22.8	32,687	22.8	31,678	22.6	30,962	23.4	(Genital
984	12.3	16,419	11.5	14,425	10.3	13,104	9.9	(Respiratory
941	12.3	16,881	11.8	16,400	11.7	16,041	12.1	(Breast
595	33.3	46,283	32.2	43,914	31.5	42,161	31.9	(Other
204	112.7	176,665	122.6	168,039	118.8	144,603	108.7	3. Deaths associated with childbirth
426	22.2	84,296	22.8	79,079	24.0	66,593	24.3	(Neonatal - 1st mo. * of life
021	23.5	87,831	23.7	84,270	25.6	72,854	26.6	Fetal deaths **
,757	2.6	4,538	3.2	4,690	3.4	5,156	3.9	(Maternal deaths ***
,878	63.6	94,334	65.8	92,906	66.4	90,473	68.5	4. Accidental causes
,897	44.4	68,867	48.0	65,103	46.5	53,546	40.5	5. Diseases of early infancy (birth injuries, postnatal asphyxia, atelectasis, etc.)
,602	29.9	45,931	32.0	45,396	32.5	49,343	37.3	6. Pneumonia, except newborn
,041	28.8	46,099	32.2	48,830	34.9	50,752	38.4	7. Tuberculosis, all types
445	20.8	31,444	21.9	32,350	23.2	35,264	26.7	8. Nephritis and other renal scleroses (kidney diseases) 1/
,988	15.1	21,349	14.9	19,765	14.1	20,009	15.1	9. Diabetes
,132	18.6	27,396	19.1	27,446	19.6	28,812	21.8	10. Senility, ill-defined, unknown
,768	12.9	19,810	13.8	17,308	12.4	15,785	11.9	11. Congenital malformations
,389	11.2	16,574	11.6	16,187	11.6	14,814	11.2	12. Suicide
,495	9.2	12,210	8.5	10,993	7.9	10,250	7.8	13. Cirrhosis of the liver
,729	7.3	11,436	8.0	11,921	8.5	12,346	9.3	14. Hernia, intestinal obstruction
,444	5.1	7,361	5.1	6,979	5.0	7,658	5.8	15. Ulcer of stomach & duodenum
,944	6.1	8,172	5.7	8,193	5.9	11,611	8.8	16. Gastritis, duodenitis, colitis, enteritis, etc.
,666	5.9	8,720	6.1	8,925	6.4	7,557	5.7	17. Homicide
,349	4.3	9,601	6.7	11,003	7.9	12,766	9.7	18. Influenza
**	****	****	****	****	****	****	****	19. Asthma
,907	4.7	7,214	5.0	7,488	5.4	7,571	5.7	20. Hyperplasia of prostate
,652	5.9	9,438	6.6	9,649	6.9	10,474	7.9	21. Syphilis
*	****	****	****	****	****	****	****	22. Cholelithiasis, all kinds (gallstones)
,580	3.8	6,038	4.2	6,263	4.5	6,392	4.8	23. Non-malignant tumors
,167	2.9	4,176	2.9	4,392	3.1	4,766	3.6	24. All other infective & parasitic diseases
,170	2.9	4,402	3.1	4,437	3.2	5,182	3.9	25. Anemias
								26. Acute nephritis & nephritis with edema including nephrosis 1/
*	****	****	****	****	*****	****	****	27. Infections of kidney
,828	2.6	4,392	3.1	4,850	3.5	6,146	4.7	28. Appendicitis
,227	2.2	3,243	2.3	2,885	2.1	2,938	2.2	29. Bronchitis
*	****	****	****	****	****	****	****	30. Other diseases of central nervous system (incl. inflammatory dis.)
*	****	****	****	****	****	****	****	31. Epilepsy
*	****	****	****	****	****	****	****	32. Alcoholism
*	****	****	****	****	****	****	****	33. Parkinson's Disease
*	****	****	****	****	****	****	****	34. Other diseases of intestines & peritoneum
*	****	****	****	****	****	****	****	35. Avitaminoses & other metabolic diseases
*	****	****	****	****	****	****	****	36. Bronchiectasis (& other broncho pulmonic diseases, 1964 & 1965

DEATHS IN THE UNITED STATES - cont.	1965		1964 (est.)		1963		1962
37. Other diseases of lung & pleural cavity, other chronic interstitial pneumonia	##	##	##	##	5,960	3.2	5,599
38. Emphysema w/w-out mention of bronchitis	##	##	##	##	17,594	9.3	14,287
39. Meningitis (not due to meningococcus)	2,390	1.2	2,360	1.2	2,343	1.2	2,322
40. Other diseases of urinary system	##	##	##	##	2,714	1.4	2,442
41. Infantile paralysis (acute)	20	0.0	30	0.0	41	0.0	60
42. Diseases of the pancreas	##	##	##	##	3,254	1.7	3,103
43. Multiple sclerosis	##	##	##	##	1,483	0.8	1,487
44. Pulmonary congestion & hypostasis	##	##	##	##	1,705	0.9	1,606
45. Infections & diseases of skin & subcutaneous tissue	##	##	##	##	2,121	1.1	2,219
46. Silicosis (occupational lung disease).........	##	##	##	##	1,563	0.8	1,495
47. Mental, psychoneurotic & personality disorders, character, behavior & intelligence disorders	##	##	##	##	1,909	1.0	1,791
48. Osteomyelitis & other diseases of bone & joint, other diseases of musculoskeletal system	##	##	##	##	1,720	0.9	1,593
49. Diseases of thyroid gland, principally thyrotoxicosis	##	##	##	##	875	0.5	921
50. Other diseases of respiratory system	##	##	##	##	1,064	0.6	938
51. Meningococcal infections	730	0.4	750	0.4	733	0.4	649
52. Motor nerve cell disease and muscular atrophy.	##	##	##	##	1,409	0.7	1,427
53. Diseases of adrenal & other endocrine glands (except thymus & thyroid)	##	##	##	##	906	0.5	903
54. Dysentery, all forms	220	0.1	210	0.1	294	0.2	323
55. Calculi of kidney & ureter	##	##	##	##	1,253	0.7	1,215
56. Rheumatoid arthritis & allied conditions	##	##	##	##	1,329	0.7	1,314
57. Whooping cough	50	0.0	110	0.1	115	0.1	83
58. Osteo-arthritis (arthrosis) & allied arthritic conditions	##	##	##	##	723	0.4	686
59. Acute upper respiratory infections	##	##	##	##	867	0.5	820
60. Senile psychosis	##	##	##	##	315	0.2	273
61. Other diseases of gallbladder & biliary ducts ..	##	##	##	##	1,245	0.7	1,178
62. Diseases of breast, ovary, fallopian tube, parametrium, uterus & other female genital organs	##	##	##	##	679	0.3	674
63. Diseases of buccal cavity & esophagus	##	##	##	##	1,016	0.5	987
64. Other diseases of stomach & duodenum	##	##	##	##	1,418	0.7	883
65. Suppurative hepatitis & liver abscess & other diseases of liver	##	##	##	##	1,114	0.6	1,034
66. Acute & Subacute yellow atrophy of liver	##	##	##	##	427	0.2	417
67. Septicemia & pyemia	##	##	##	##	2,359	1.3	2,084
68. Infectious hepatitis	700	0.4	##	##	852	0.5	911
69. Encephalitis, myelitis & encephalomyelitis (except acute infectious)	##	##	##	##	359	0.2	484
70. Cerebral spastic infantile paralysis	##	##	##	##	730	0.4	752
71. Diseases of thymus gland	##	##	##	##	124	0.1	130
72. Late effects of intracranial abscess or pyogenic infection	##	##	##	##	531	0.3	578
73. Purpura & other hemorrhagic conditions	##	##	##	##	650	0.3	689
74. Abscess of lung	##	##	##	##	651	0.3	561
75. Diseases of ear & mastoid process	##	##	##	##	272	0.1	275
All other causes, residual (all other diseases caused less than 500 deaths each in 1949 through 1963) ###	55,830	28.8	54,230	28.3	1,899	1.0	1,738

Figures for years 1949-1963 are final. Figure
the provisional comparability ratio to deat
Total deaths exclude deaths among armed for
1/Beginning in 1952, item 8 is broken down in
and "acute nephritis, nephritis with edem
* For 1949-64, under 28 days. Ratios per 1,00
**Includes all reported products of gestation
***Maternal deaths are classified according t
are provisional figures computed by appl
****No comparability date (between 5th and 6t
# 1945-1948 figures include some data coded b
Data not available.
### The residual is the difference between to
(A) column - total deaths.
(B-1) Death rate per 1,000; rates based on po
(B-2) Death rate per 100,000 estimated midyea

1963		1962		1961		1960		1959		1958		1957		
960	3.2	5,599	3.0	5,370	2.9	5,535	3.1	4,994	2.8	5,016	2.9	5,693	3.3	5,
594	9.3	14,287	7.7	10,269	5.6	9,253	5.2	7,728	4.4	6,707	3.9	5,757	3.4	4,
343	1.2	2,322	1.2	2,263	1.2	2,316	1.3	2,208	1.3	2,247	1.3	2,025	1.2	1
714	1.4	2,442	1.3	2,427	1.3	2,210	1.2	2,206	1.3	2,159	1.2	2,150	1.3	2,
41	0.0	60	0.0	90	0.0	230	0.1	454	0.3	255	0.1	221	0.1	
254	1.7	3,103	1.7	3,064	1.7	3,041	1.7	2,920	1.7	2,770	1.6	2,373	1.4	2,
483	0.8	1,487	0.8	1,432	0.8	1,484	0.8	1,389	0.8	1,414	0.8	1,467	0.9	1,
705	0.9	1,606	0.9	1,587	0.9	1,591	0.9	1,624	0.9	1,955	1.1	1,478	0.9	1,
121	1.1	2,219	1.1	2,151	1.2	2,069	1.2	2,011	1.1	1,791	1.0	1,666	1.0	1,
563	0.8	1,495	0.8	1,504	0.9	1,591	0.9	1,541	0.9	1,475	0.8	1,590	0.9	1,
909	1.0	1,791	0.9	1,879	1.0	1,856	1.0	1,829	1.1	1,528	0.9	1,052	0.6	
720	0.9	1,593	0.8	1,570	0.9	1,579	0.9	1,529	0.9	1,491	0.8	1.489	0.9	1,
875	0.5	921	0.5	942	0.5	958	0.5	979	0.6	1,015	0.6	1,090	0.6	1,
064	0.6	938	0.5	1,057	0.5	1,127	0.6	1,017	0.6	1,080	0.6	1,067	0.6	1,
733	0.4	649	0.3	586	0.3	644	0.4	699	0.4	746	0.4	785	0.5	
409	0.7	1,427	0.8	1,277	0.7	1,273	0.7	1,230	0.7	1,174	0.7	1,089	0.6	1,
906	0.5	903	0.5	823	0.4	808	0.5	789	0.5	759	0.4	732	0.5	
294	0.2	323	0.2	300	0.2	355	0.2	402	0.2	407	0.2	440	0.3	
253	0.7	1,215	0.7	1,210	0.7	1,109	0.6	1,106	0.6	1,171	0.7	1,227	0.7	1,
329	0.7	1,314	0.7	1,298	0.7	1,257	0.7	1,214	0.7	1,075	0.6	818	0.5	
115	0.1	83	0.0	76	0.0	118	0.1	269	0.2	177	0.1	183	0.1	
723	0.4	686	0.4	727	0.4	760	0.4	854	0.5	790	0.4	692	0.4	
867	0.5	820	0.4	808	0.4	911	0.5	971	0.6	936	0.5	1,045	0.6	
315	0.2	273	0.1	339	0.2	396	0.2	423	0.2	457	0.3	357	0.2	
245	0.7	1,178	0.6	1,106	0.6	1,138	0.6	1,136	0.6	1,142	0.7	1,107	0.7	
579	0.3	674	0.5	638	0.3	706	0.5	650	0.4	613	0.4	708	0.4	
016	0.5	987	0.5	925	0.5	881	0.5	919	0.5	918	0.5	889	0.5	
418	0.7	883	0.5	992	0.5	977	0.5	948	0.5	937	0.5	881	0.5	
14	0.6	1,034	0.6	1,101	0.6	1,093	0.6	1,033	0.6	987	0.5	910	0.5	
27	0.2	417	0.2	413	0.2	492	0.3	461	0.3	560	0.3	565	0.3	
359	1.3	2,084	1.1	1,886	1.0	1,920	1.1	1,760	1.0	1,663	1.0	1,351	0.8	1,
352	0.5	911	0.5	976	0.5	938	0.5	897	0.5	897	0.5	897	0.5	
359	0.2	484	0.3	389	0.2	403	0.2	495	0.3	500	0.3	566	0.3	
730	0.4	752	0.4	684	0.4	746	0.4	750	0.4	745	0.4	643	0.4	
124	0.1	130	0.1	116	0.1	136	0.1	178	0.1	172	0.1	197	0.1	
531	0.3	578	0.3	630	0.3	682	0.4	641	0.4	645	0.4	603	0.4	
350	0.3	689	0.4	661	0.4	681	0.4	654	0.4	674	0.4	641	0.4	
351	0.3	561	0.3	543	0.3	604	0.3	614	0.3	652	0.4	601	0.4	
272	0.1	275	0.1	321	0.2	397	0.2	405	0.2	438	0.3	408	0.2	
99	1.0	1,738	0.9	2,011	1.1	2,008	1.1	1,987	1.1	2,026	1.2	1,916	1.1	1,8

49-1963 are final. Figures for 1939-48 are based on the 6th Revision of the International Lists of Causes of Death and are provisional
mparability ratio to deaths coded by the 5th Revision. 1964 figures are estimates based on a 10% sampling. All figures from National V
de deaths among armed forces overseas. Rates based on population, excluding armed forces overseas; do not include fetal deaths.
item 8 is broken down into "chronic & unspecified nephritis & other renal sclerosis" (which appears under category of major cardiovas
itis, nephritis with edema including nephrosis", which appears as item 26.
28 days. Ratios per 1,000 live births. These deaths are included in items #5 and #11.
ted products of gestation. Ratios per 1,000 live births.
re classified according to the 6th Revision of the International Lists of Causes of Death. The figures for 1949 through 1963 are final
figures computed by applying the comparability ratio to deaths for 1939-48. 1962 figures are estimates based on 10% sampling.
data (between 5th and 6th Revision of International Lists of Causes of Death) available.
include some data coded by the 5th Revision of International Lists of Causes of Death. No comparability ratio available.
e.
the difference between total deaths and sum of estimated deaths for specified causes.
eaths.
1,000; rates based on population, excluding armed forces overseas; rates do not include fetal deaths.
100,000 estimated midyear population, exclusive of fetal deaths.

1958		1957		1956		1955		1954		1953		1952		
016	2.9	5,693	3.3	5,106	3.0	4,329	2.7	3,614	2.2	3,216	2.1	2,624	1.7	2,
707	3.9	5,757	3.4	4,448	2.7	3,639	2.2	2,995	1.9	2,594	1.6	1,914	1.2	2,
247	1.3	2,025	1.2	1,933	1.2	1,873	1.1	1,829	1.1	2,059	1.3	1,918	1.2	1,
159	1.2	2,150	1.3	2,015	1.2	1,900	1.1	1,794	1.0	1,694	1.0	1,637	1.1	1,
255	0.1	221	0.1	556	0.3	1,043	0.6	1,368	0.8	1,450	0.9	3,145	2.0	1,5
770	1.6	2,373	1.4	2,178	1.3	2,110	1.3	1,875	1.2	1,794	1.1	1,655	1.1	1,4
414	0.8	1,467	0.9	1,448	0.9	1,409	0.9	1,394	0.9	1,431	0.9	1,531	1.0	1,4
955	1.1	1,478	0.9	1,356	0.8	1,196	0.7	1,282	0.8	1,415	0.9	1,497	1.0	1,3
791	1.0	1,666	1.0	1,461	0.9	1,334	0.8	1,300	0.8	1,259	0.8	1,251	0.8	1,3
475	0.8	1,590	0.9	1,418	0.9	1,437	0.9	1,287	0.8	1,336	0.8	1,358	0.9	1,3
528	0.9	1,052	0.6	963	0.6	1,010	0.6	1,071	0.6	3,499	2.2	3,639	2.4	1,3
491	0.8	1,489	0.9	1,415	0.9	1,372	0.8	1,356	0.8	1,391	0.8	1,347	0.9	1,2
015	0.6	1,090	0.6	1,178	0.7	1,210	0.7	1,227	0.8	1,381	0.8	1,482	1.0	1,2
080	0.6	1,067	0.6	1,067	0.4	1,119	0.4	1,092	0.5	1,221	0.8	1,259	0.8	1,2
746	0.4	785	0.5	762	0.5	907	0.6	1,015	0.6	1,325	0.8	1,386	0.9	1,1
174	0.7	1,089	0.6	1,095	0.7	988	0.6	1,032	0.6	1,001	0.6	1,062	0.7	1,1
759	0.4	732	0.5	751	0.5	589	0.3	628	0.4	667	0.4	694	0.4	1,0
407	0.2	440	0.3	476	0.3	556	0.4	655	0.5	882	0.6	937	0.6	1,0
171	0.7	1,227	0.7	1,154	0.7	1,116	0.7	1,076	0.7	975	0.6	986	0.6	9
075	0.6	818	0.5	780	0.5	906	0.6	822	0.5	895	0.6	929	0.6	9
177	0.1	183	0.1	266	0.2	467	0.3	373	0.2	270	0.2	402	0.3	9
790	0.4	692	0.4	777	0.4	725	0.4	729	0.5	855	0.6	853	0.5	9
936	0.5	1,045	0.6	901	0.5	904	0.6	954	0.6	1,043	0.6	1,067	0.7	9
457	0.3	357	0.2	355	0.2	378	0.2	440	0.3	708	0.4	819	0.5	8
142	0.7	1,107	0.7	931	0.6	800	0.5	758	0.5	797	0.5	804	0.5	7
513	0.4	708	0.4	609	0.4	720	0.5	723	0.5	733	0.4	777	0.5	7
918	0.5	889	0.5	862	0.5	755	0.5	706	0.4	722	0.4	719	0.5	77
937	0.5	881	0.5	791	0.5	983	0.6	1,038	0.6	1,036	0.6	1,055	0.7	74
87	0.5	910	0.5	825	0.5	796	0.5	753	0.5	744	0.5	694	0.4	68
60	0.3	565	0.3	518	0.3	526	0.3	533	0.3	611	0.4	657	0.4	68
63	1.0	1,351	0.8	1,118	0.7	938	0.6	897	0.6	783	0.5	726	0.5	67
97	0.5	897	0.5	806	0.5	841	0.5	821	0.5	821	0.5	794	0.5	67
00	0.3	566	0.3	532	0.3	525	0.3	589	0.4	606	0.4	740	0.5	66
45	0.4	643	0.4	611	0.4	645	0.4	589	0.4	609	0.4	654	0.4	61
72	0.1	197	0.1	238	0.1	297	0.2	350	0.2	443	0.3	558	0.4	60
45	0.4	603	0.4	499	0.3	550	0.3	548	0.3	513	0.3	547	0.4	59
74	0.4	641	0.4	587	0.4	557	0.3	553	0.3	566	0.4	607	0.4	58
52	0.4	601	0.4	595	0.4	500	0.3	505	0.3	537	0.3	526	0.3	56
38	0.3	408	0.2	396	0.2	478	0.3	469	0.3	480	0.3	477	0.3	50
26	1.2	1,916	1.1	1,831	1.1	1,858	1.2	1,818	1.2	1,896	1.2	2,001	1.3	1,09

f Causes of Death and are provisional; they are computed by applying
sampling. All figures from National Vital Statistics Division.
; do not include fetal deaths.
ars under category of major cardiovascular-renal diseases in item 1)

gures for 1949 through 1963 are final, while those for 1939-48
imates based on 10% sampling.

bility ratio available.

aths.

1953		1952		1951		1950		1949		1948		1947	
3,216	2.1	2,624	1.7	2,041	1.3	1,648	1.1	1,396	0.9	****	****	****	****
2,594	1.6	1,914	1.2	2,014	1.3	1,451	1.0	915	0.6	****	****	****	****
2,059	1.3	1,918	1.2	1,881	1.2	1,839	1.2	2,147	1.4	2,296	1.6	2,492	1.7
1,694	1.0	1,637	1.1	1,651	1.1	1,629	1.1	1,746	1.1	****	****	****	****
1,450	0.9	3,145	2.0	1,551	1.0	1,904	1.3	2,720	1.8	1,854	1.3	567	0.4
1,794	1.1	1,655	1.1	1,481	1.0	1,379	0.9	1,258	0.8	****	****	****	****
1,431	0.9	1,531	1.0	1,418	0.9	1,278	0.8	1,379	0.9	****	****	****	****
1,415	0.9	1,497	1.0	1,399	0.9	1,346	0.9	1,389	0.9	****	****	****	****
1,259	0.8	1,251	0.8	1,369	0.9	1,315	0.9	1,421	0.9	****	****	****	****
1,336	0.8	1,358	0.9	1,358	0.9	1,373	0.9	1,393	0.9	****	****	****	****
3,499	2.2	3,639	2.4	1,357	0.9	1,493	1.0	1,928	1.1	****	****	****	****
1,391	0.8	1,347	0.9	1,237	0.8	1,138	0.7	1,096	0.7	****	****	****	****
1,381	0.8	1,482	1.0	1,211	0.8	1,326	0.9	1,562	1.1	****	****	****	****
1,221	0.8	1,259	0.8	1,210	0.8	1,369	0.9	1,487	0.9	****	****	****	****
1,325	0.8	1,386	0.9	1,124	0.7	974	0.6	917	0.6	863	0.6	907	0.6
1,001	0.6	1,062	0.7	1,103	0.7	1,006	0.7	1,042	0.7	****	****	****	****
667	0.4	694	0.4	1,087	0.7	1,079	0.7	687	0.5	****	****	****	****
882	0.6	937	0.6	1,040	0.7	923	0.6	1,440	1.0	1,176	0.8	948	0.7
975	0.6	986	0.6	963	0.6	949	0.6	932	0.6	****	****	****	****
895	0.6	929	0.6	957	0.6	807	0.6	811	0.5	****	****	****	****
270	0.2	402	0.3	951	0.6	1,118	0.7	727	0.5	1,140	0.8	1,944	1.4
855	0.6	853	0.5	950	0.6	905	0.6	1,057	0.7	****	****	****	****
1,043	0.6	1,067	0.7	909	0.6	781	0.5	912	0.6	****	****	****	****
708	0.4	819	0.5	826	0.5	1,053	0.7	1,208	0.8	****	****	****	****
797	0.5	804	0.5	798	0.5	793	0.5	796	0.5	****	****	****	****
733	0.4	777	0.5	791	0.5	889	0.6	1,010	0.7	****	****	****	****
722	0.4	719	0.5	778	0.5	729	0.5	763	0.5	****	****	****	****
1,036	0.6	1,055	0.7	742	0.5	760	0.5	863	0.5	****	****	****	****
744	0.5	694	0.4	688	0.4	685	0.4	673	0.5	****	****	****	****
611	0.4	657	0.4	687	0.4	674	0.4	726	0.5	****	****	****	****
783	0.5	726	0.5	677	0.4	616	0.4	587	0.4	****	****	****	****
821	0.5	794	0.5	675	0.4	552	0.4	560	0.4	****	****	****	****
606	0.4	740	0.5	661	0.4	758	0.5	827	0.6	****	****	****	****
609	0.4	654	0.4	613	0.4	658	0.4	677	0.5	****	****	****	****
443	0.3	558	0.4	605	0.4	641	0.4	827	0.6	****	****	****	****
513	0.3	547	0.4	597	0.4	779	0.5	704	0.5	****	****	****	****
566	0.4	607	0.4	589	0.4	563	0.4	583	0.4	****	****	****	****
537	0.3	526	0.3	566	0.4	582	0.4	676	0.5	****	****	****	****
480	0.3	477	0.3	501	0.4	553	0.4	667	0.5	****	****	****	****
1,896	1.2	2,001	1.3	1,094	0.7	1,762	1.2	3,839	2.6	71,323#	48.8	75,440#	52.6

48		1947		1946		1945		DEATHS IN THE UNITED STATES - cont.
	****	****	****	****	****	****	****	37. Other diseases of lung & pleural cavity, other chronic interstitial pneumonia
	****	****	****	****	****	****	****	38. Emphysema w/w-out mention of bronchitis
	1.6	2,492	1.7	2,471	1.8	2,510	1.9	39. Meningitis (not due to meningococcus)
	****	****	****	****	****	****	****	40. Other diseases of urinary system
	1.3	567	0.4	1,805	1.3	1,160	0.9	41. Infantile paralysis (acute)
	****	****	****	****	****	****	****	42. Diseases of the pancreas
	****	****	****	****	****	****	****	43. Multiple sclerosis
	****	****	****	****	****	****	****	44. Pulmonary congestion & hypostasis
	****	****	****	****	****	****	****	45. Infections & diseases of skin & subcutaneous tissue
	****	****	****	****	****	****	****	46. Silicosis (occupational lung disease)
	****	****	****	****	****	****	****	47. Mental, psychoneurotic & personality disorders, character, behavior & intelligence disorders
	****	****	****	****	****	****	****	48. Osteomyelitis & other diseases of bone & joint, other diseases of musculoskeletal system
	****	****	****	****	****	****	****	49. Diseases of thyroid gland, principally thyrotoxicosis
	****	****	****	****	****	****	****	50. Other diseases of respiratory system
	0.6	907	0.6	1,243	0.9	1,709	1.3	51. Meningococcal infections
	****	****	****	****	****	****	****	52. Motor nerve cell disease and muscular atrophy.
	****	****	****	****	****	****	****	53. Diseases of adrenal & other endocrine glands (except thymus & thyroid)
	0.8	948	0.7	1,039	0.7	1,745	1.3	54. Dysentery, all forms
	****	****	****	****	****	****	****	55. Calculi of kidney & ureter
	****	****	****	****	****	****	****	56. Rheumatoid arthritis & allied conditions
	0.8	1,944	1.4	1,234	0.9	1,743	1.3	57. Whooping cough
	****	****	****	****	****	****	****	58. Osteo-arthritis (arthrosis) & allied arthritic conditions
	****	****	****	****	****	****	****	59. Acute upper respiratory infections
	****	****	****	****	****	****	****	60. Senile psychosis
	****	****	****	****	****	****	****	61. Other diseases of gallbladder & biliary ducts
	****	****	****	****	****	****	****	62. Diseases of breast, ovary, fallopian tube, parametrium, uterus & other female genital organs
	****	****	****	****	****	****	****	63. Diseases of buccal cavity & esophagus
	****	****	****	****	****	****	****	64. Other diseases of stomach & duodenum
	****	****	****	****	****	****	****	65. Suppurative hepatitis & liver abscess & other diseases of liver
	****	****	****	****	****	****	****	66. Acute & Subacute yellow atrophy of liver
	****	****	****	****	****	****	****	67. Septicemia & pyemia
	****	****	****	****	****	****	****	68. Infectious hepatitis
	****	****	****	****	****	****	****	69. Encephalitis, myelitis & encephalomyelitis (except acute infectious)
	****	****	****	****	****	****	****	70. Cerebral spastic infantile paralysis
	****	****	****	****	****	****	****	71. Diseases of thymus gland
	****	****	****	****	****	****	****	72. Late effects of intracranial abscess or pyogenic infection
	****	****	****	****	****	****	****	73. Purpura & other hemorrhagic conditions
	****	****	****	****	****	****	****	74. Abscess of lung
	****	****	****	****	****	****	****	75. Diseases of ear & mastoid process
#	48.8	75,440#	52.6	82,843#	58.5	86,363#	65.4	All other causes, residual (all other diseases caused less than 500 deaths each in 1949 through 1963) ###

NUMBER OF DEATHS WHICH WOULD HAVE OCCURRED HAD THE 1937 DEATH RATE PREVAILED THROUGHOUT THE PERIOD 1938 - 1964

YEAR	ESTIMATED MID YEAR POPULATION* (excl. armed forces overseas)	DEATH RATE PER 1,000**	TOTAL ANNUAL DEATHS**	TOTAL ANNUAL DEATHS AT 1937 RATE	NUMBER OF ADDITIONAL DEATHS IF 1937 DEATH RATE HAD PREVAILED
1937	128,824,829	11.3	1,450,427		
1938	129,824,939	10.6	1,381,391	1,467,022	85,631 or 6.2%
1939	130,879,718	10.6	1,387,897	1,478,941	91,044 or 6.6%
1940	131,936,000	10.7	1,417,269	1,490,877	73,608 or 5.2%
1941	133,058,000	10.5	1,397,642	1,503,555	105,913 or 7.6%
1942	133,752,000	10 4	1,385,187	1,511,398	126,211 or 9.1%
1943	133,971,000	10.9	1,459,544	1,513,872	54,328,or 3.7%
1944	132,622,000	10.6	1,411,338	1,498,629	87,291 or 6.2%
1945	132,137,000	10.6	1,401,719	1,493,148	91,429 or 6.5%
1946	139,893,000	10.0	1,395,617	1,580,791	185,174 or 13.2%
1947	143,375,000	10.1	1,445,370	1,620,138	174,768 or 12.1%
1948	146,045,000	9.9	1,444,337	1,650,309	205,972 or 14.2%
1949	148,558,000	9.7	1,443,607	1,678,705	235.098 or 16.3%
1950	151,240,000	9.63	1,452,454	1,709,012	256,558 or 17.6%
1951	153,377,000	9.66	1,482,099	1,733,160	251,061 or 16.9%
1952	155,761,000	9.61	1,496,838	1,760,099	263,261 or 17.5%
1953	158,313,000	9.58	1,517,541	1,788,937	271,396 or 17.8%
1954	161,191,000	9.2	1,481,091	1,821,458	340,367 or 22.9%
1955	164,302,000	9.3	1,528,717	1,856,613	327,896 or 21.5%
1956	167,261,000	9.4	1,564,476	1,890,049	325,573 or 20.8%
1957	170,295,000	9.6	1,633,128	1,924,334	291,206 or 17.8%
1958	174,149,000	9.5	1,647,886	1,957,522	309,636 or 18.8%
1959	177,135,000	9.4	1,656,814	2,001,625	344,811 or 20.8%
1960	179,983,000	9.5	1,711,982	2,033,808	321,826 or 18.8%
1961	183,043,000	9.3	1,701,522	2,068,386	366.864 or 21.5%
1962	185,890,000	9.5	1,757,000	2,099,789	342,789 or 19.5%
1963	188,658,000	9.6	1,813,549	2,131,835	318,286 or 17.5%
1964***	191,371,000	9.4	1,801,000	2,162,492	361,492 or 20.1%
					Total: 6,209,489

*-Figures from Bureau of the Census. From 1958 on, figures include Alaska and Hawaii. (The population decrease from 1943 to 1944, and sharp increase from 1945 to 1946, was due primarily to the departure and return of overseas armed forces.)

**-Figures from National Vital Statistics Division, U.S. Public Health Service, Washington, D.C.

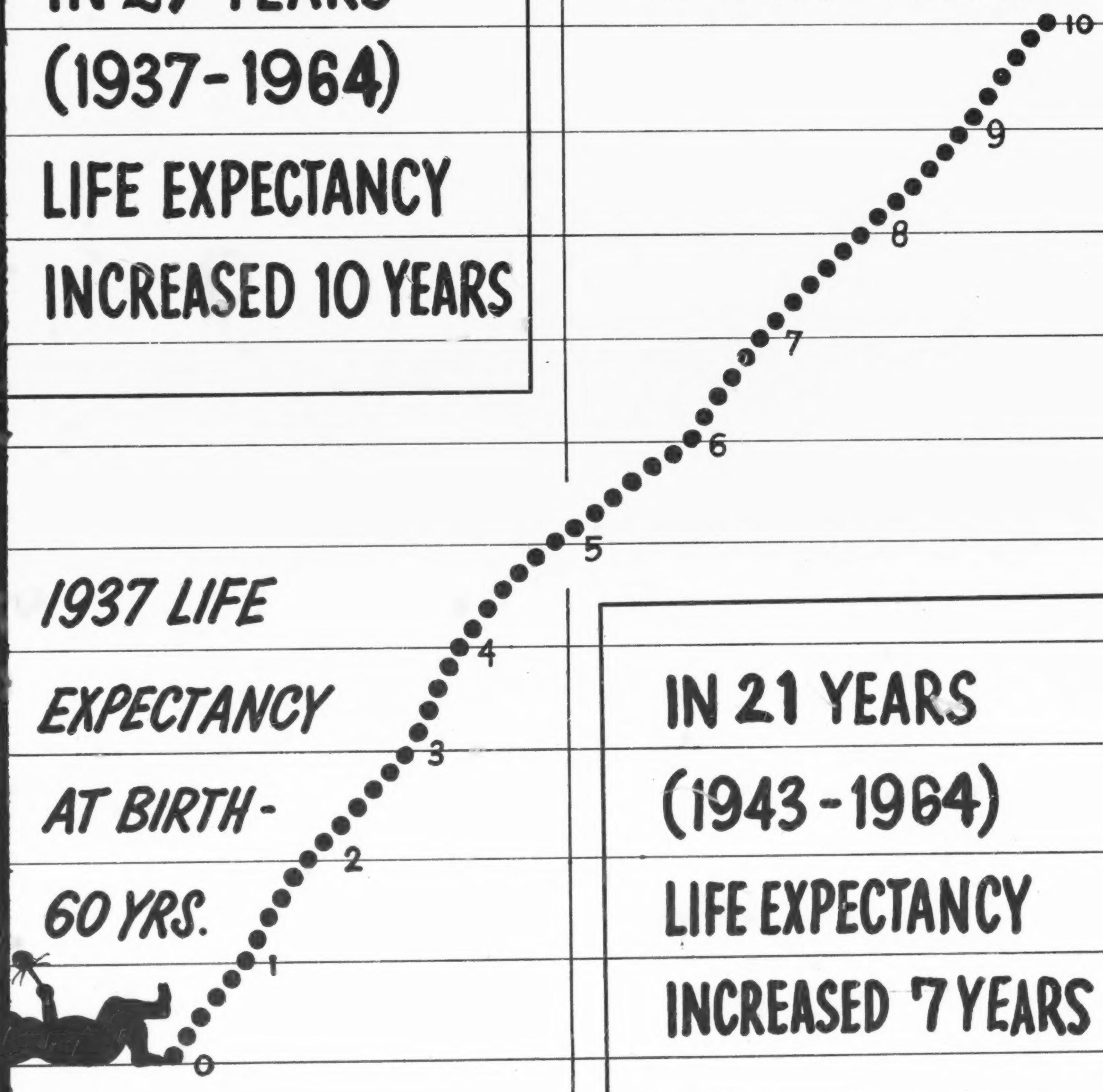
***-Based on provisional 1964 mortality figures.

January 1966

Life Expectancy Chart

IN 27 YEARS
(1937-1964)
LIFE EXPECTANCY
INCREASED 10 YEARS

1964 LIFE EXPECTANCY
AT BIRTH - 70 YRS.



1937 LIFE
EXPECTANCY
AT BIRTH -
60 YRS.

IN 21 YEARS
(1943-1964)
LIFE EXPECTANCY
INCREASED 7 YEARS

LIFE EXPECTANCY CHART

TOTAL DEATHS AND DEATH RATES, DEATHS UNDER 60 YEARS OF AGE, MEDIAN AGE AT DEATH AND LIFE EXPECTANCY BY RACE AND SEX: DEATH-REGISTRATION STATES 1/, 1930-1964

(Exclusive of fetal deaths. Rates per 1,000 population enumerated as of April 1 for 1940 & 1950 and estimated as of July 1 for other years)

YEAR	TOTAL DEATHS		Deaths under 60 years of age	MEDIAN AGE AT DEATH (IN YEARS)					LIFE EXPECTANCY (IN YEARS)				
					White		Nonwhite			White		Nonwhite	
	Number	Rate		Total	Male	Female	Male	Female	Total	Male	Female	Male	Fem
1930	1,327,240	11.3	743,645	55.5	57.2	59.6	41.3	38.8	59.7	59.7	63.5	47.3	49
1931	1,307,273	11.1	721,871	56.2	57.8	60.2	41.3	39.1	61.1	60.8	64.7	49.5	51
1932	1,293,269	10.9	682,305	58.0	59.4	61.7	42.8	40.9	62.1	62.0	64.5	52.8	54
1933	1,342,106	10.7	704,060	58.2	59.6	61.8	43.0	41.4	63.3	62.7	66.3	53.5	56
1934	1,396,903	11.1	730,885	58.3	59.7	62.1	43.1	41.3	61.1	60.5	64.6	50.2	5
1935	1,392,752	10.9	716,419	59.0	60.1	62.7	43.9	42.3	61.7	61.0	65.0	51.3	55
1936	1,479,228	11.6	742,739	59.8	60.7	63.7	44.8	43.0	58.5	58.0	61.9	47.0	5
1937	1,450,427	11.3	721,648	60.1	60.9	64.0	45.4	43.2	60.0	59.3	63.8	48.3	5
1938	1,381,391	10.6	667,903	60.9	61.7	64.8	46.0	44.1	63.5	63.2	66.8	51.7	54
1939	1,387,897	10.6	644,786	62.0	62.5	65.8	47.3	45.7	63.7	63.3	66.6	53.2	56
1940	1,417,269	10.8	641,436	62.6	63.0	66.4	48.6	46.7	62.9	62.1	66.6	51.5	54
1941	1,397,642	10.5	635,047	62.5	62.9	65.4	48.2	46.3	64.8	64.4	68.5	52.5	5
1942	1,385,187	10.3	621,504	62.8	62.9	66.7	48.8	47.3	66.2	65.9	69.4	55.4	58
1943	1,459,544	10.9	639,065	63.4	63.4	67.2	50.0	48.6	63.3	63.2	65.7	55.4	56
1944	1,411,338	10.6	610,621	63.6	63.6	67.4	50.6	48.5	65.2	64.5	68.4	55.8	57
1945	1,401,719	10.6	596,369	63.9	63.8	67.7	51.0	49.3	65.9	64.4	69.5	56.1	5
1946	1,395,617	10.0	586,847	64.2	63.9	68.1	51.2	50.0	66.7	65.1	70.3	57.5	6
1947	1,445,370	10.1	590,058	64.8	64.4	68.7	52.2	51.1	66.8	65.2	70.5	57.9	6
1948	1,444,337	9.9	575,414	65.2	64.8	69.2	52.8	51.9	67.2	65.5	71.0	58.1	6
1949	1,443,607	9.7	560,777	65.6	65.2	69.6	53.1	52.6	68.0	66.2	71.9	58.9	6
1950	1,452,454	9.6	545,405	66.2	65.7	70.2	54.2	53.5	68.2	66.5	72.2	59.1	6
1951	1,482,099	9.7	551,387	66.4	65.9	70.4	54.3	54.0	68.4	66.5	72.4	59.1	6
1952	1,496,838	9.6	553,123	66.5	65.9	70.6	54.4	54.0	68.6	66.6	72.7	59.1	6
1953	1,517,541	9.6	542,670	67.0	66.3	71.0	55.1	54.9	68.8	66.8	72.9	59.7	64
1954	1,481,091	9.2	519,600	67.3	66.6	71.3	55.2	55.0	69.6	67.4	73.6	61.0	6
1955	1,528,717	9.3	519,734	67.8	67.0	71.9	55.9	56.1	69.5	67.3	73.6	61.2	6
1956	1,564,476	9.4	523,868	68.0	67.2	72.2	56.3	56.7	69.6	67.3	73.7	61.1	6
1957	1,633,128	9.6	541,380	68.2	67.4	72.2	56.3	57.1	69.3	67.1	73.5	60.3	6
1958	1,647,886	9.5	538,948	68.5	67.6	72.7	57.0	57.4	69.4	67.2	73.7	60.6	6
1959	1,656,814	9.4	539,646	68.7	67.6	72.9	56.9	57.6	69.9	67.6	74.2	61.4	6
1960	1,711,982	9.5	547,771	68.9	67.9	73.1	57.8	58.6	69.7	67.4	74.1	61.1	6
1961	1,701,522	9.3	538,320	69.2	68.1	73.4	58.1	59.5	70.2	67.8	74.5	61.9	6
1962	1,757,000	9.5	546,329	69.5	68.3	73.7	58.6	60.2	70.0	67.6	74.4	61.5	6
1963	1,813,549	9.6	557,938	69.7	68.5	74.0	59.1	60.5	69.9	67.5	74.4	60.9	6
1964*	1,801,000	9.4	555,500	69.6	68.4	74.0	58.3	60.4	70.2	N.A.	N.A.	N.A.	N

1/ The death-registration states increased in number from 43 states and the District of Columbia in 1927 to the entire continental United States in 1933. All medians are based on deaths by 5-year age groups except for 1961.

NOTE: Figures exclude deaths among armed forces overseas. Rates based on population excluding armed forces overseas.
All figures from National Vital Statistics Division, U.S. Public Health Service.
*Figures are estimated.
N.A. - figures not presently available.

AND LIFE EXPECTANCY

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MATERNAL MORTALITY RATES AND INFANT MORTALITY RATES: BIRTH-REGISTRATION STATES 1/, 1930-1964

(Maternal mortality rates & Infant mortality rates
per 1,000 live births).

LIFE EXPECTANCY (IN YEARS)				YEAR	Maternal mortality rates 2/	INFANT MORTALITY RATES 3/		
White		Nonwhite				Under 1 year	Under 1 month	1-11 months
Male	Female	Male	Female					
59.7	63.5	47.3	49.2	1930	6.73	64.6	35.7	28.9
60.8	64.7	49.5	51.5	1931	6.60	61.6	34.6	27.0
62.0	64.5	52.8	54.6	1932	6.33	57.6	33.5	24.1
62.7	66.3	53.5	56.0	1933	6.19	58.1	34.0	24.1
60.5	64.6	50.2	53.7	1934	5.93	60.1	34.1	26.0
61.0	65.0	51.3	55.2	1935	5.82	55.7	32.4	23.3
58.0	61.9	47.0	51.4	1936	5.68	57.1	32.6	24.6
59.3	63.8	48.3	52.5	1937	4.89	54.4	31.3	23.2
63.2	66.8	51.7	54.3	1938	4.35	51.0	29.6	21.4
63.3	66.6	53.2	56.0	1939	4.04	48.0	29.3	18.7
62.1	66.6	51.5	54.9	1940	3.41	47.0	28.8	18.3
64.4	68.5	52.5	55.3	1941	2.88	45.3	27.7	17.7
65.9	69.4	55.4	58.2	1942	2.35	40.4	25.7	14.7
63.2	65.7	55.4	56.1	1943	2.23	40.4	24.7	15.6
64.5	68.4	55.8	57.7	1944	2.28	39.8	24.7	15.1
64.4	69.5	56.1	59.6	1945	2.07	38.3	24.3	13.9
65.1	70.3	57.5	61.0	1946	1.57	33.8	24.0	9.7
65.2	70.5	57.9	61.9	1947	1.35	32.2	22.8	9.4
65.5	71.0	58.1	62.5	1948	1.17	32.0	22.2	9.8
66.2	71.9	58.9	62.7	1949	0.90	31.3	21.4 4/	9.9 5/
66.5	72.2	59.1	62.9	1950	0.83	29.2	20.5 4/	8.7 5/
66.5	72.4	59.1	63.3	1951	0.75	28.4	20.0 4/	8.4 5/
66.6	72.7	59.1	63.7	1952	0.68	28.4	19.8 4/	8.6 5/
66.8	72.9	59.7	64.4	1953	0.61	27.8	19.6 4/	8.2 5/
67.4	73.6	61.0	65.8	1954	0.52	26.6	19.1 4/	7.5 5/
67.3	73.6	61.2	65.9	1955	0.47	26.4	19.1 4/	7.3 5/
67.3	73.7	61.1	65.9	1956	0.41	26.0	18.9 4/	7.1 5/
67.1	73.5	60.3	65.2	1957	0.41	26.3	19.1 4/	7.3 5/
67.2	73.7	60.6	65.5	1958	0.38	27.1	19.5 4/	7.6 5/
67.6	74.2	61.4	66.5	1959	0.37	26.4	19.0 4/	7.4 5/
67.4	74.1	61.1	66.3	1960	0.37	26.0	18.7 4/	7.3 5/
67.8	74.5	61.9	67.0	1961	0.37	25.3	18.4 4/	6.9 5/
67.6	74.4	61.5	66.8	1962	0.35	25.3	18.3 4/	7.0 5/
67.5	74.4	60.9	66.5	1963	0.36	25.2	18.2 4/	7.0 5/
N.A.	N.A.	N.A.	N.A.	1964*	0.34	24.2	17.5 4/	6.7 5/

ia in 1927
age groups except for 1961.

armed forces overseas.

1/ The birth-registration states increased in number from 40 states and the District of Columbia in 1927 to the entire continental United States in 1933.
2/ The rates are based on deaths classified by the International Lists of Causes of Deaths.
3/ Exclusive of fetal deaths.
4/ Under 28 days.
5/ 28 days - 11 months.
All figures from the National Vital Statistics Division, U.S. Public

Medical Care Expenses

MEDICAL CARE EXPENSES

PRIVATE EXPENDITURES FOR MEDICAL CARE, BY TYPE OF SERVICE

1963

Type of Expenditure	Amount	Percent
Hospital Care	$ 6,973,000,000	24.5%
Physicians' services	6,385,000,000	30.0%
Dentists' services	2,345,000,000	11.1%
Drugs and drug sundries	4,228,000,000	19.8%
Eyeglasses and appliances	1,407,000,000	5.6%
Other professional services	840,000,000	4.3%
Nursing home care	440,000,000	1.3%
Health insurance, net cost	1,071,000,000	3.4%
	$23,689,000,000	100.0%

Source: "Statistical Abstract of the United States - 1965", Page 71

Civilian Expenditures

CIVILIAN EXPENDITURES

PERSONAL CONSUMPTION EXPENDITURES BY TYPE OF PRODUCT, 1963

Food, beverages and tobacco	$95,200,000,000.
Household operation	52,400,000,000.
Housing	48,900,000,000.
Transportation	47,200,000,000.
Clothing, accessories and jewelry	37,100,000,000.
Medical care and death expenses	25,400,000,000.
Personal business	24,900,000,000.
Recreation	22,700,000,000.
Personal care (other than medical)	6,500,000,000.
Private education and research	5,700,000,000.
Religious and welfare activities	5,400,000,000.
Foreign travel and remittances, net	3,500,000,000.
Total personal consumption expenditures, 1963	$375,000,000,000.

Source: "Statistical Abstract of the United States, 1965", 86th edition.
U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

WHAT CIVILIANS SPENT IN 1964

Total personal consumption expenditures, 1963 - $375,000,000,000.*

Among individual items:

$12,630,060,000	Alcoholic beverages
$ 7,345,870,000	Tobacco products & smokers' accessories
$ 958,450,000	Boxed candy
$ 553,740,000	Greeting cards
$ 420,690,000	Aspirin & aspirin compounds (internal analgesics)
$ 406,320,000	Cough and cold items
$ 358,800,000	Chewing gum
$ 212,260,000	Hair spray fixatives
$ 202,630,000	Shampoos
$ 199,580,000	Ballpoint pens and refills
$ 174,190,000	Laxatives and cathartics
$ 174,140,000	Pocket size books
$ 165,060,000	Lipsticks
$ 145,390,000	Face creams
$ 141,980,000	Dieting aids
$ 134,370,000	Toilet water and cologne
$ 114,740,000	Mouth washes and gargles
$ 101,950,000	Hair coloring preparations
$ 83,480,000	Men's hair tonics
$ 79,090,000	Stomach sweeteners (antacids)
$ 75,120,000	Foot products
$ 59,270,000	Hand lotions and creams
$ 50,150,000	Pressed cake face powder
$ 48,760,000	Nail polish and enamel
$ 44,550,000	Make-up bases
$ 33,420,000	Suntan lotions and oils
$ 31,050,000	Elastic stockings
$ 30,020,000	Playing cards
$ 29,440,000	Bubble bath salts, tablets, oils, etc.
$ 25,290,000	Veterinary biologicals for pet use & other dog and pet medicaments
$ 20,930,000	Powder puffs
$ 8,960,000	Eye lotions and washes

*-"Statistical Abstract of the United States-1965", 86th Edition, U.S. Bureau of the Census, Washington, D.C. 1965.
All other figures from a survey compiled and published annually by the Topics Publishing Co., Inc., "Drug Topics", New York, N. Y.

Distribution of Money Income

DISTRIBUTION OF FAMILIES BY TOTAL MONEY INCOME – 1964 – UNITED STATES

Money Income	No. of Families	Percentage	
Under $4,000:			
Under $1,000	1,532,000	3.2%	
$1,000 to $1,999	2,988,000	6.2%	
$2,000 to $2,999	3,864,000	8.1%	
$3,000 to $3,999	4,001,000	8.4%	25.9%
$4,000 to $6,000:			
$4,000 to $4,999	4,113,000	8.6%	
$5,000 to $5,999	4,738,000	9.9%	18.5%
$6,000 and over:			
$6,000 to $6,999	4,714,000	9.9%	
$7,000 to $7,999	4,458,000	9.3%	
$8,000 to $9,999	6,635,000	13.9%	
$10,000 to $14,999	7,761,000	16.2%	
$15,000 and over	3,031,000	6.3%	55.6%
	47,835,000	100.0%	

Median income	$6,600.

Source: Current Population Reports, Series P-60. No. 44, May 27, 1965, Consumer Income. Bureau of the Census, U.S. Department of Commerce, Washington, D. C.

Voluntary Health Agencies

VOLUNTARY HEALTH AGENCIES

	1952		1953		1954		
	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds
American Cancer Society 219 East 42nd Street, N.Y., N.Y.	16,438,184	Tot. 4,572,664 (Natl. Off. 4,109,546)	19,802,980	Tot. 5,623,227 (Natl. Off. 4,950,745)	21,670,152	6,044,630	24,427,102
Damon Runyon Mem. Fund 33 W. 56 St., N.Y., N.Y. (3)	1,110,267	1,375,159	1,229,670	1,190,227	1,751,858	1,145,512	996,455
Research to Prevent Blindness, Inc. 598 Madison Ave., N.Y. 22, N.Y. (1)							
National Council to Combat Blindness 41 W. 57th St., N.Y., N.Y.	59,347	33,809	74,104	46,265	105,390	65,557	184,532
Nat'l.Soc.for Prevention of Blindness 16 E. 40 St., N.Y., N.Y.	217,278	39,908	216,122	51,016	237,906	43,958	245,868
The Deafness Research Foundation 366 Madison Ave., New York 17, N.Y.(6)							
American Heart Association 44 E. 23rd St., N.Y., N.Y.	6,582,133	Tot. 2,296,681 (Natl. Off. 798,591)	8,555,197	Tot. 2,803,126 (Natl. Off. 990,056)	11,330,195	3,797,253	13,575,963
American Social Health Assoc. 1790 Broadway, N.Y., N.Y.	433,425	None	415,333	None	399,703	None	319,000
Arthritis & Rheumatism Foundation 10 Columbus Circle, N.Y., N.Y.	1,426,000	Tot. 313,655 (Natl. Off. 116,000)	1,478,953	Tot. 312,750 (Natl. Off. 93,300)	1,771,458	359,033	2,220,017
Natl. Assoc. for Mental Health 10 Columbus Circle, N.Y.,N.Y.(Natl.)	592,463	71,725	586,631	70,432	550,153	96,863	630,240
The National Foundation 800 Second Ave., N.Y.,N.Y. (5)	41,410,000	3,316,853	51,440,000	2,223,806	(9) 66,907,000	2,566,441	(9) 52,475,000
Natl. Society for Crippled Children and Adults 2023 Ogden Ave., Chicago, Ill.	6,721,938	11,957	7,835,900	21,899	11,329,817	91,705	8,532,727
Muscular Dystrophy Assn. of Amer. (2) 1790 Broadway, N.Y., N.Y.	668,250	317,000	3,914,442	(8) 547,576	4,262,358	(8) 767,737	3.488,635
Natl. Multiple Sclerosis Soc. 257 Park Ave. So., N.Y., N.Y.	Natl. Off. Only 248,033	100,360	Natl. Off. Only 447,852	95,973	907,888	116,619 (Natl. Off.)	1,297,651
United Cerebral Palsy 321 W. 44th St., N.Y., N.Y.	(4) Tot. 4,650,000 (Natl. Off. 1,691,839))	128,466	6,423,000	245,940	8,249,000	531,184	7,506,689
National Tuberculosis Assn. 1790 Broadway, N.Y.	Tot.25,238,148 (Natl. Off. 1,394,289)	(Natl. Off. 277,172)	Tot.23,899,044 (Natl. Off. 1,433,342)	(Natl. Off. 260,203)	24,670,202	431,666	25,780,366
Planned Parenthood Fed. of America 515 Madison Ave., N.Y., N.Y.	735,468	27,794	949,585	85,760	1,024,593	56,793	1,150,494
TOTALS	105,085,099	13,170,334	127,759,839	13,578,200	155,772,498	16,114,951	143.588,607

(1) Organized Feb. 1960.

(2) Organized April 1950. Figures for April 1950 through December 31, 1950.

(3) All funds raised support research. If funds raised exceed allocations in any year, these funds represent amount carried over for future allocation during next fiscal period. If allocations exceed the amount raised in any year, these allocations in excess of income represent funds raised in prior years.

(4) Figures for 1951 are fiscal year figures, while figures for 1952 are calendar year figures.

(5) Originally "The Nat'l Foundation for Infantile Paralysis, Inc." The new name was adopted in 1958 and the scope of the Foundation broadened to medical scientific research, professional education and medical care in the fields of polio, virus diseases, arthritis, birth defects, central nervous system disorders.

(6) The Deafness Research Foundation, organized in 1958, is the only national voluntary organization devoted to advancing research in ear disorders.

(7) Only expenditures for medical research are by the Nat'l. Headquarters which conducts research program of Society.

(8) Represents total research funds actually expended and committed during fiscal years indicated. Additional funds have been appropriated but not committed.

(9) From these funds, $29,734,000 was spent during 1953, $28,548,000 during 1954 for patient aid, $27,624,000 in 1955, $26,753,000 in 1956, $21,502,000 in 1957.

(10) In addition, the National Office received legacies totaling $133,407 and a contribution of $500,000 from the Charles Hayden Foundation which were specifically designated for research, and will be used for that purpose.

(11) The Nat'l Easter Seal Research Foundation, through which agency the Nat'l Society for Crippled Children and Adults will support its medical research program, was in its development stages.

(12) In addition, in 1956, the National Office rece
added to the Research Fund and $121,371 was re
Research program; in 1957 the National Office
which will be used for research.

(13) For fiscal year ending August 31, 1957.

(14) National Vital Statistics Division, U.S. Publi

(15) American Cancer Society, New York.

(16) National Society for the Prevention of Blindne

(17) Health Statistics from the U.S. National Health
States July 1957-June 1961. U.S. Dept. of Heal

(18) 1965 Statistical Abstract of the United States

(19) Arthritis and Rheumatism Foundation, New York.

(20) Muscular Dystrophy Associations of America, In

(21) "A Survey of Mental Disease in an Urban Popula
Illness. Reported October 1956 to the American

(22) Heart Disease in Adults, United States, 1960-6
Statistics, U.S. Public Health Service, Washi

(23) National Multiple Sclerosis Society, New York.

(24) National Association for Crippled Children and

(25) National Tuberculosis Association, New York.

(26) United Cerebral Palsy, New York.

(27) Total includes funds raised by RPB but contrib
to construct and equip new eye research labora

(28) Allocated from funds raised in prior year.

GENERA

No

	1953		1954		1955		1956		195
edical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds
72,664 ff. 09,546)	19,802,980	Tot. 5,623,227 (Natl. Off. 4,950,745)	21,670,152	6,044,630	24,427,102	(10) 6,907,653	27,234,612	7,735,537 (12)	29,659,508
75,159	1,229,670	1,190,227	1,751,858	1,145,512	996,455	991,175	984,743	1,006,033	860,764
33,809	74,104	46,265	105,390	65,557	184,532	106,447	257,915	127,954	205,629
39,908	216,122	51,016	237,906	43,958	245,868	36,264	255,902	47,667	253,243
96,681 ff. 98,591)	8,555,197	Tot. 2,803,126 (Natl. Off. 990,056)	11,330,195	3,797,253	13,575,963	4,929,518	17,755,910	6,167,173	20,563,929
None	415,333	None	399,703	None	319,000	None	343,694	None	308,103
13,655 ff. 16,000)	1,478,953	Tot. 312,750 (Natl. Off. 93,300)	1,771,458	359,033	2,220,017	407,951	2,449,396	467,521	3,026,427
71,725	586,631	70,432	550,153	96,863	630,240	126,074	(Natl. Off.) 695,054	(Natl. Off.) 149,007	(Natl. Off.) 817,123
16,853	51,440,000	2,223,806	(9) 66,907,000	2,566,441	(9) 52,475,000	2,701,781	(9) 51,971,000	3.069,239	(9) 43,987,000
11,957	7,835,900	21,899	11,329,817	91,705	8,532,727	(11) 19,708	12,262,739	(13) 101,408	12,535,918
17,000	3,914,442	(8) 547,576	4,262,358	(8) 767,737	3,488,635	(8) 776,055	4,191,109	(8) 1,405,415	5,358,602
00,360	Natl. Off. Only 447,852	95,973	907,888	116,619 (Natl. Off.)	1,297,651	130,507 (Natl. Off.)	2,007,606	270,805 (Natl. Off.)	2,340,924
28,466	6,423,000	245,940	8,249,000	531,184	7,506,689	547,083	8,318,000	538,865	8,375,036
ff. 77,172)	Tot.23,899,044 (Natl. Off. 1.433,342)	(Natl. Off. 260,203)	24,670,202	431,666	25,780,366	747,829 (est.)	26,310,491	800,000 (est.)	25,974,311
27,794	949,585	85,760	1,024,593	56,793	1,150,494	63,662	1,468,805	48,652	2,042,483
70,334	127,759,839	13,578,200	155,772,498	16,114,951	143,588,607	18,315,111	157,249,564	21,935,276	157,442,449

r 31, 1950.
locations in any year, these funds
ext fiscal period. If allocations
xcess of income represent funds

1952 are calendar year figures.
." The new name was adopted in 1958
fic research, professional education
hritis, birth defects, central ner-

only national voluntary organization

dquarters which conducts research

ted during fiscal years indicated.

,000 during 1954 for patient aid,
7.
133,407 and a contribution of
fically designated for research,

ncy the Nat'l Society for Crippled
n, was in its development stages.

(12) In addition, in 1956, the National Office received $458,090 in legacies and bequests which were added to the Research Fund and $121,371 was received from Divisions for support of National Research program; in 1957 the National Office received in addition legacies totaling $993,310 which will be used for research.
(13) For fiscal year ending August 31, 1957.
(14) National Vital Statistics Division, U.S. Public Health Service, Washington, D.C.
(15) American Cancer Society, New York.
(16) National Society for the Prevention of Blindness, New York
(17) Health Statistics from the U.S. National Health Survey, Series B-No. 35: Impairments, United States July 1957-June 1961. U.S. Dept. of Health, Education, and Welfare, Washington, D.C.
(18) 1965 Statistical Abstract of the United States
(19) Arthritis and Rheumatism Foundation, New York.
(20) Muscular Dystrophy Associations of America, Inc.
(21) "A Survey of Mental Disease in an Urban Population"--Baltimore survey by Commission on Chronic Illness. Reported October 1956 to the American Public Health Association.
(22) Heart Disease in Adults, United States, 1960-62. Series 11, No. 6, Nat'l Center for Health Statistics, U.S. Public Health Service, Washington, D.C., September 1964.
(23) National Multiple Sclerosis Society, New York.
(24) National Association for Crippled Children and Adults, Chicago, Illinois.
(25) National Tuberculosis Association, New York.
(26) United Cerebral Palsy, New York.
(27) Total includes funds raised by RPB but contributed by donors directly to eye research centers to construct and equip new eye research laboratories.
(28) Allocated from funds raised in prior year.

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GENERAL FUNDS RAISED AND MEDICAL RESEARCH FUNDS ALLOCATED BY VOLU

Note: Many of the organizations listed on this chart use the
for patient care, clinics, medical education, social re

954	1955		1956		1957		1958		
Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds
6,044,630	24,427,102	(10) 6,907,653	27,234,612	7,735,537 (12)	29,659,508	(12) 8,529,032	33,952,439	9,587,026*	35,37
1,145,512	996,455	991,175	984,743	1,006,033	860,764	981,372	885,002	904,850*	1,26
65,557	184,532	106,447	257,915	127,954	205,629	127,509	267,016	124,199	37
43,958	245,868	36,264	255,902	47,667	253,243	57,222	648,348	52,388	76
3,797,253	13,575,963	4,929,518	17,755,910	6,167,173	20,563,929	7,800,000 (est.)	22,345,718	7,897,735	24,00
None	319,000	None	343,694	None	308,103	None	329,000	None	32
359,033	2,220,017	407,951	2,449,396	467,521	3,026,427	446,459	3,605,612	571,779	4,10
96,863	630,240	126,074	(Natl. Off.) 695,054	(Natl. Off.) 149,007	(Natl. Off.) 817,123	(Natl. Off.) 167,671	4,482,623	174,600	5,51
2,566,441	(9) 52,475,000	2,701,781	(9) 51,971,000	3.069,239	(9) 43,987,000	3,283,000	36,865,500	(5) 7,859,050*	34,68
91,705	8,532,727	(11) 19,708	12,262,739	(13) 101,408	12,535,918	147,000 (not final)	12,412,445	152,271	15,30
(8) 767,737	3,488,635	(8) 776,055	4,191,109	(8) 1,405,415	5,358,602	(8) 1,498,915	5,508,619	1,460,443*	5,57
116,619 (Natl. Off.)	1,297,651	130,507 (Natl. Off.)	2,007,606	270,805 (Natl. Off.)	2,340,924	303,303 (Natl. Off.)	Tot. 2,807,242 (Natl. Off.) 994,030)	(7) 413,675*	Tot. 2,860 (Natl. Off 1,76
531,184	7,506,689	547,083	8,318,000	538,865	8,375,036	420,975	9,105,971	577,560*	9,50
431,666	25,780,366	747,829 (est.)	26,310,491	800,000 (est.)	25,974,311	600,677	28,600,311	870,657	29,43
56,793	1,150,494	63,662	1,468,805	48,652	2,042,483	52,367	2,170,654	97,161	2,42
16,114,951	143,588,607	18,315,111	157,249,564	21,935,276	157,442,449	24,415,502	166,122,273	30,824,576	173,36

in 1956, the National Office received $458,090 in legacies and bequests which were
Research Fund and $121,371 was received from Divisions for support of National
ram; in 1957 the National Office received in addition legacies totaling $993,310
used for research.
ar ending August 31, 1957.
l Statistics Division, U.S. Public Health Service, Washington, D.C.
er Society, New York.
ety for the Prevention of Blindness, New York
tics from the U.S. National Health Survey, Series B-No. 35: Impairments, United
957-June 1961. U.S. Dept. of Health, Education, and Welfare, Washington, D.C.
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rophy Associations of America, Inc.
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S. Public Health Service, Washington, D.C., September 1964.
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ciation for Crippled Children and Adults, Chicago, Illinois.
rculosis Association, New York.
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and equip new eye research laboratories.
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In columns where a total figure is given with a National Office figure in p
means that the National Office retained only that much of the total figure
remainder out amongst its field offices, or designated part of the remainde

The figures given on this chart are for the year designated; they are not a
year. In all cases, the medical research funds are part of the total funds,
are inclusive of medical research funds.

NOTE: The American Diabetes Association, 11 W. 42nd St., N.Y., N.Y. carries
contributions and does not consider itself a voluntary health agency.
included in this chart.

* - These medical research funds include training funds as follows:

	1958	1959
Amer. Cancer Society	$ 713,351	$ 708,583
Damon Runyon Fund	118,000	144,325
Muscular Dystrophy Assoc. of Amer.	19,525	32,500
National Foundation	3,101,252	2,975,105
United Cerebral Palsy	305,011	298,398
Nat'l Multiple Sclerosis Society	41,513	56,412

GENERAL FUNDS RAISED AND MEDICAL RESEARCH FUNDS ALLOCATED BY VOLUNTARY HEALTH AGENCIES INTERESTED IN SPECIFIC DISEASES

Note: Many of the organizations listed on this chart use the major part of their total funds raised each year for patient care, clinics, medical education, social research, special appliances, rehabilitation, etc.

1956		1957		1958		1959		1960	
Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medi Rese Fund
27,234,612	7,735,537 (12)	29,659,508	(12) 8,529,032	33,952,439	9,587,026*	35,379,943	10,575,177*	33,728,741	11,061,
984,743	1,006,033	860,764	981,372	885,002	904,850*	1,264,364	908,950*	1,539,795	1,331,
								108,803	77,
257,915	127,954	205,629	127,509	267,016	124,199	375,552	139,970	374,796	276,
255,902	47,667	253,243	57,222	648,348	52,388	767,950	71,203	724,401	45,
								139,664	30,
17,755,910	6,167,173	20,563,929	7,800,000 (est.)	22,345,718	7,897,735	24,004,865	8,599,193	26,663,224	9,053,
343,694	None	308,103	None	329,000	None	324,000	None	520,907	24,
2,449,396	467,521	3,026,427	446,459	3,605,612	571,779	4,108,675	800,366	4,240,879	800,
Natl. Off.) 695,054	(Natl. Off.) 149,007	(Natl. Off.) 817,123	(Natl. Off.) 167,671	4,482,623	174,600	5,510,470	267,770	5,789,573	404,
(9) 51,971,000	3.069,239	(9) 43,987,000	3,283,000	36,865,500	(5) 7,859,050*	34,688,093	(5) 9,075,983*	30,728,077	5,220,
12,262,739	(13) 101,408	12,535,918	147,000 (not final)	12,412,445	152,271	15,300,299	196,688	17,444,885	411,
4,191,109	(8) 1,405,415	5,358,602	(8) 1,498,915	5,508,619	1,460,443*	5,578,237	1,334,201*	4,986,423	1,116,
2,007,606	270,805 (Natl. Off.)	2,340,924	303,303 (Natl. Off.)	Tot. 2,807,242 (Natl. Off.) 994,030)	(7) 413,675*	Tot. 2,860,605 (Natl. Off. 1,768,136)	(7) 476,125*	Tot. 3,243,051 (Natl. Off. 1,241,754)	(7) 442,
8,318,000	538,865	8,375,036	420,975	9,105,971	577,560*	9,508,000	665,560*	10,270,000	639,
26,310,491	800,000 (est.)	25,974,311	600,677	28,600,311	870,657	29,439,046	995,433	26,740,906	700, (est.
1,468,805	48,652	2,042,483	52,367	2,170,654	97,161	2,426,718	112,835	Tot. 2,808,091 (Natl. Off. 551,480)	43, (Natl. Off.
157,249,564	21,935,276	157,442,449	24,415,502	166,122,273	30,824,576	173,360,113	34,311,159	170,052,216	31,680,

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. 35: Impairments, United
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Nat'l Center for Health
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In columns where a total figure is given with a National Office figure in parenthesis below it, it means that the National Office retained only that much of the total figure and apportioned the remainder out amongst its field offices, or designated part of the remainder to research.

The figures given on this chart are for the year designated; they are not accumulative from year to year. In all cases, the medical research funds are part of the total funds, i.e., the total funds are inclusive of medical research funds.

NOTE: The American Diabetes Association, 11 W. 42nd St., N.Y., N.Y. carries on no public campaign for contributions and does not consider itself a voluntary health agency. It is therefore not included in this chart.

* - These medical research funds include training funds as follows:

	1958	1959
Amer. Cancer Society	$ 713,351	$ 708,583
Damon Runyon Fund	118,000	144,325
Muscular Dystrophy Assoc. of Amer.	19,525	32,500
National Foundation	3,101,252	2,975,106
United Cerebral Palsy	305,011	298,398
Nat'l Multiple Sclerosis Society	41,513	56,412

MEDICAL RESEARCH FUNDS ALLOCATED BY VOLUNTARY HEALTH AGENCIES INTERESTED IN SPECIFIC DISEASES

anizations listed on this chart use the major part of their total funds raised each year
, clinics, medical education, social research, special appliances, rehabilitation, etc.

1958		1959		1960		1961		1962	
al ds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Researc Funds
33,952,439	9,587,026*	35,379,943	10,575,177*	33,728,741	11,061,317	36,942,955	12,468,606	39,071,873	13,165,562
885,002	904,850*	1,264,364	908,950*	1,539,795	1,331,725	1,264,407	1,151,356	1,055,063	1,128,230
				108,803	77,901	1,458,087	138,656	(27) 2,234,972	(27) 1,794,108
267,016	124,199	375,552	139,970	374,796	276,468	358,296	274,388	343,116	233,157
648,348	52,388	767,950	71,205	724,401	45,000	1,138,850	40,200	853,579	86,943
				139,664	30,881	196,722	105,030	220,225	122,680
22,345,718	7,897,735	24,004,865	8,599,193	26,663,224	9,053,592	26,437,931	9,962,609	27,135,318	(28) 9,941,838
329,000	None	324,000	None	520,907	24,329	494,114	11,476	500,170	50,980
3,605,612	571,779	4,108,675	800,366	4,240,879	800,510	4,257,100	1,011,664	4,613,300	1,107,130
4,482,623	174,600	5,510,470	267,770	5,789,573	404,843	6,667,525	642,699	6,000,000	413,078
36,865,500	(5) 7,859,050*	34,688,093	(5) 9,075,983*	30,728,077	5,220,612	27,980,897	5,470,187	26,076,724	4,885,116
2,412,445	152,271	15,300,299	196,688	17,444,885	412,866	18,500,000	279,594	20,167,580	244,612
5,508,619	1,460,443*	5,578,237	1,334,201*	4,986,423	1,116,235	5,282,440	1,222,840	5,558,702	1,643,560
2,807,242 . Off.) 994,030)	(7) 413,675*	Tot. 2,860,605 (Natl. Off. 1,768,136)	(7) 476,125*	Tot. 3,243,051 (Natl. Off. 1,241,754)	(7) 442,692	Tot. 3,304,903 (Natl. Off. 1,273,558)	(7) 651,470	Tot. 3,541,854 (Natl. Off. 1,405,855)	(7) 691,216
9,105,971	577,560*	9,508,000	665,560*	10,270,000	639,311	9,835,117	727,264	10,606,747	782,212
8,600,311	870,657	29,439,046	995,433	26,740,906	700,000 (est.)	26,259,030	834,537	27,429,202	1,059,094
,170,654	97,161	2,426,718	112,835	Tot. 2,808,091 (Natl. Off. 551,480)	43,017 (Natl. Off. Only	Tot. 3,216,202 (Natl. Off. 674,055)	35,234 Natl.Off.Only	Tot. 4,674,777 (Natl. Off. 1,114,075)	39,563 Natl.Off. Only
5,122,273	30,824,576	173,360,113	34,311,159	170,052,216	31,680,299	173,594,576	35,027,810	180,083,202	37,389,079

iven with a National Office figure in parenthesis below it, it
ned only that much of the total figure and apportioned the
ces, or designated part of the remainder to research.

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arch funds are part of the total funds, i.e., the total funds
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ion, 11 W. 42nd St., N.Y., N.Y. carries on no public campaign for
sider itself a voluntary health agency. It is therefore not

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1958	1959
$ 713,351	$ 708,583
118,000	144,325
19,525	32,500
3,101,252	2,975,105
305,011	298,398
41,513	56,412

S INTERESTED IN SPECIFIC DISEASES

otal funds raised each year
ances, rehabilitation, etc.

	1960		1961		1962		1963		1964	
al rch	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	Medical Research Funds	Total Funds	M R F
7*	33,728,741	11,061,317	36,942,955	12,468,606	39,071,873	13,165,562	42,413,993	13,382,458	43,775,341	14,9
0*	1,539,795	1,331,725	1,264,407	1,151,356	1,055,063	1,128,230	2,738,141	1,154,446	2,071,700	1,5
	108,803	77,901	1,458,087	138,656	(27) 2,234,972	(27) 1,794,108	1,608,000	1,551,000	616,209	4
0	374,796	276,468	358,296	274,388	343,116	233,157	391,352	312,439	383,788	2
3	724,401	45,000	1,138,850	40,200	853,579	86,943	848,101	80,964	936,821	
	139,664	30,881	196,722	105,030	220,225	122,680	241,005	305,448	404,099	23
3	26,663,224	9,053,592	26,437,931	9,962,609	27,135,318	(28) 9,941,838	27,900,383	(28) 9,432,887	30,121,526	10,0
e	520,907	24,329	494,114	11,476	500,170	50,980	532,181	173,452	557,463	20
6	4,240,879	800,510	4,257,100	1,011,664	4,613,300	1,107,130	4,986,534	1,248,157	5,690,000	1,44
	5,789,573	404,843	6,667,525	642,699	6,000,000	413,078	6,000,000	311,741	8,399,000	33
3*	30,728,077	5,220,612	27,980,897	5,470,187	26,076,724	4,885,116	24,506,839	7,423,613	23,680,585	3,90
	17,444,885	411,866	18,500,000	279,594	20,167,580	244,612	21,589,124	264,031	23,197,923	33
*	4,986,423	1,116,235	5,282,440	1,222,840	5,558,702	1,643,560	5,558,000	1,682,401	5,774,619	1,92
*	Tot. 3,243,051 (Natl. Off. 1,241,754)	(7) 442,692	Tot. 3,304,903 (Natl. Off. 1,273,558)	(7) 651,470	Tot. 3,541,854 (Natl. Off. 1,405,855)	(7) 691,216	3,763,087	(7) 590,218	4,117,855	59
*	10,270,000	639,311	9,835,117	727,264	10,606,747	782,212	10,758,531	677,441	11,200,000	71
	26,740,906	700,000 (est.)	26,259,030	834,537	27,429,202	1,059,094	29,639,793	1,329,472	31,093,113	1,40
	Tot. 2,808,091 (Natl. Off. 551,480)	43,017 (Natl. Off. Only	Tot. 3,216,202 (Natl. Off. 674,055)	35,234 Natl.Off.Only	Tot. 4,6[illegible]4,777 (Natl. Off. 1,114,075)	39,563 Natl.Off. Only	6,227,531	14,870	8,639,072	8
	170,052,216	31,680,299	173,594,576	35,027,810	180,083,202	37,389,079	189,919,214	40,172,850	200,659,114	38,67

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Medical Research Funds		Disability	Estimated Annual Deaths 1964 (14)	Estimated Disabilities	1964	
					Estimated Research Funds Spent Per Death by the Listed Voluntary Health Organizations	Estimated Research Funds Spent Per Estimated Disability by the Listed Voluntary Health Organizations
,993,368	American Cancer Society 219 East 42nd St., N.Y., N.Y.	Cancer and Other Tumors	290,030	(15) 870,000 presently under treatment	$57.17	$19.06 per case under treatment
1,588,400	Damon Runyon Mem. Fund 33 West 56 St., N.Y., N.Y. (3)					
486,437	Research to Prevent Blindness, Inc. 598 Madison Ave., N.Y. 22, N.Y. (1)	Blindness	---	3,500,000 visual impairments (16) 416,000 legally blind	---	$ 0.24
278,574	National Council to Combat Blindness 41 W. 57th St., N.Y., N.Y.					
68,883	Nat'l Soc. for Prevention of Blindness 16 E. 40th St., N.Y., N.Y.					
239,700	The Deafness Research Foundation 310 Lexington Ave., N.Y., N.Y. (6)	Hearing impairment (in some degree)	---	(17) 6,231,000	---	$ .04
(28) ,063,961	American Heart Association 44 E. 23rd St., N.Y., N.Y.	Diseases of Heart and Circulation	989,380	(22) 16,421,000 (in some degree)	$10.17	$ .61
207,288	American Social Health Assoc. 1790 Broadway, N.Y., N.Y.	Syphilis	2,700	124,137 cases (18) reported in 1963	$76.77	$ 1.67
,443,040	Arthritis & Rheumatism Foundation 10 Columbus Circle, N.Y., N.Y.	Arthritis & Rheumatism (in some degree)	---	(19) 13,000,000	---	$ .11
336,014	Natl. Assoc. for Mental Health 10 Columbus Circle, N.Y., N.Y.	Mental Disorders (in some degree)	---	(21) 19,000,000	---	$ .02
,908,723	The National Foundation 800 Second Ave., N.Y., N.Y. (5)	Infantile Paralysis	30	(18) 449 cases - 1963	(5) ---	(5) ---
335,813	Natl. Society for Crippled Children and Adults 2023 Ogden Ave., Chicago, Ill.	Crippling conditions including cerebral palsy, polio, arthritis, muscular dystrophy, multiple sclerosis, etc.	---	---	---	---
,920,213	Muscular Dystrophy Assn. of Amer. (2) 1790 Broadway, N.Y., N.Y.	Muscular Dystrophy	---	(20) more than 200,000	---	$ 9.60
595,838	Natl. Multiple Sclerosis Soc. 257 Park Ave. So., N.Y., N.Y.	Multiple Sclerosis	---	(23) 250,000	---	$ 2.38
711,159	United Cerebral Palsy 321 W. 44th St., N.Y., N.Y.	Cerebral Palsy	---	(26) 550,000	---	$ 1.29
409,236	National Tuberculosis Assn. 1790 Broadway, N.Y., N.Y.	Tuberculosis	8,100	(25) 610,000	$174.00	$ 2.31
85,834	Planned Parenthood Fed. of America 515 Madison Ave., N.Y., N.Y.	Intra & Extra-familial physical, emotional & social disabilities associated with unwanted parenthood	very few or none	Not Measurable	---	---
672,481						